**DOP 4 - 021 - 160089 - 2024/01**

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry (033)

## Inhaltsverzeichnis/ Table of contents — Seite/ Page

# Leistungserklärung

Nr.: **4 - 021 - 160089 - 2024/01**

1.) Eindeutiger Kenncode des Produkttyps:

**Injektionssystem EJOT Multifix Vinylester / Sormat ITH Vinylester für Mauerwerk (033)**

2.) Verwendungszweck:

**Metall-Injektionsdübel zur Verankerung im Mauerwerk**

3.) Hersteller:

**EJOT SE & Co. KG, Market Unit Construction, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) System zur Bewertung und Überprüfung der Leistungsbeständigkeit:

**System 1**

5.)

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|---|---|
| Europäisches Bewertungsdokument | **EAD 330076-01-0604** |
| Europäisch Technische Bewertung: | **ETA-16/0089** |
| Technische Bewertungsstelle: | **DIBt - Deutsches Institut für Bautechnik, Berlin** |
| Notifizierte Stelle: | **2873 - IFSW - Technische Universität Darmstadt** |

6.) Erklärte Leitung(en):

a) Mechanische Festigkeit und Standsicherheit (BWR 1) und Sicherheit bei der Nutzung (BWR 4)

| Wesentliche Merkmale | Leistungswerte |
|---|---|
| Charakteristischer Widerstand für statische und quasistatische Einwirkungen | Siehe Anhang B 5, B 6, C 1 bis C 56 |
| Charakteristischer Widerstand und Verschiebungen für seismische Einwirkung | Leistung nicht bewertet |
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# Leistungserklärung

Nr.: **4 - 021 - 160089 - 2024/01**

EJOT®

b) Brandschutz (BWR 2)

| Wesentliche Merkmale | Leistungswerte |
|---|---|
| Brandverhalten | Klasse A1 |
| Feuerwiderstand unter Zug- und Querbeanspruchung mit und ohne Hebelarm. Minimale Achs- und Randabstände | Siehe Anhang C2, C7, C8, C13, C14, C17, C18, C19, C20, C37, C38, C43, C44, C45, C46, C51 und C52 |
| | |

c) Hygiene, Gesundheit und Umweltschutz (BWR 3)

| Wesentliche Merkmale | Leistungswerte |
|---|---|
| Inhalt, Emission und/oder Freisetzung von gefährlichen Stoffen | Leistung nicht bewertet |

d) Schallschutz (BWR 5)

| Wesentliche Merkmale | Leistungswerte |
|---|---|
| | |

e) Energieeinsparung und Wärmeschutz (BWR 6)

| Wesentliche Merkmale | Leistungswerte |
|---|---|
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f) Nachhaltige Nutzung der natürlichen Ressourcen (BWR 7)

| Wesentliche Merkmale | Leistungswerte |
|---|---|
| | |

Die Leistung des vorstehenden Produkts entspricht der erklärten Leitung/den erklärten Leistungen. Für die Erstellung der Leistungserklärung im Einklang mit der Verordnung (EU) Nr. 305/2011 ist allein der oben genannte Hersteller verantwortlich.

Unterzeichnet für den Hersteller und im Namen des Herstellers von:

**Dr. Jens Weber**
(Name)

**Bad Laasphe, 28.01.2025**
(Ort und Datum der Ausstellung)

(Unterschrift)

# Declaration of Performance

No **4 - 021 - 160089 - 2024/01**

1.) Unique identification code of the product-type:

**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry (033)**

2.) Intended use:

**Metal Injection anchors for use in masonry**

3.) Manufacturer:

**EJOT SE & Co. KG, Market Unit Construction, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) System of AVCP:

**System 1**

5.)

| | |
|---|---|
| European Assesment Document: | **EAD 330076-01-0604** |
| European Technical Assessment: | **ETA-16/0089** |
| Technical assessment body: | **DIBt - Deutsches Institut für Bautechnik, Berlin** |
| Notified body: | **2873 - IFSW - Technische Universität Darmstadt** |

6.) Declared Performance:

a) Mechanical resistance and stability (BWR 1) and safety and accessibility (BWR 4)

| Essential characteristic | Performance |
|---|---|
| Characteristic resistance for static and quasi-static loading | See Annexes B 5, B 6, C 1 to C 56 |
| Characteristic resistance and displacements for seismic loading | No performance assessed |
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# Declaration of Performance

No **4 - 021 - 160089 - 2024/01**

EJOT®

b) Safety in case of fire (BWR 2)

| Essential characteristic | Performance |
|---|---|
| Reaction to fire | Class A1 |
| Resistance to fire under tension and shear loading with and without lever arm. Minimum edge distances and spacing | See Annexes C2, C7, C8, C13, C14, C17, C18, C19, C20, C37, C38, C43, C44, |
| | |

c) Hygiene, health and the environment (BWR 3)

| Essential characteristic | Performance |
|---|---|
| Content, emission and/or release of dangerous substances | No performance assessed |

d) Protection against noise (BWR 5)

| Essential characteristic | Performance |
|---|---|
| | |

e) Energy economy and heat retention (BWR 6)

| Essential characteristic | Performance |
|---|---|
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| | |
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f) Sustainable use of natural resources (BWR 7)

| Essential characteristic | Performance |
|---|---|
| | |

The performance of the product identified above is in conformity with the set of declared performance/s. This declaration of performance is issued, in accordance with Regulation (EU) No 305/2011, under the sole responsibility of the manufacturer identified above.

Signed for and on behalf of the manufacturer by:

**Dr. Jens Weber**
(Name)

**Bad Laasphe, 28.01.2025**
(Place and date of issue)

(Signature)

# ДЕКЛАРАЦИЯ ЗА ЕКСПЛОАТАЦИОННИ ПОКАЗАТЕЛИ

№ **4 - 021 - 160089 - 2024/01**

1.) Уникален идентификационен код на типа продукт:

**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry (033)**

2.) Предвидена употреба/употреби:

**Метални анкери за инжектиране за използване в зидария**

3.) Производител:

**EJOT SE & Co. KG, Market Unit Construction, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Система/системи за оценяване и проверка на постоянството на експлоатационните показатели:

**Сиситема 1**

5.)

| | |
|---|---|
| Европейски документ за оценяване: | **EAD 330076-01-0604** |
| Европейска техническа оценка: | **ETA-16/0089** |
| Орган за техническа оценка: | **DIBt - Deutsches Institut für Bautechnik, Berlin** |
| Нотифициран орган/органи: | **2873 - IFSW - Technische Universität Darmstadt** |

6.) Декларирани експлоатационни показатели:

а) Механична устойчивост и стабилност (BWR 1) и безопасност и достъпност (BWR 4)

| Основни характеристики | Показатели |
|---|---|
| Характерна устойчивост при статично и квазистатично натоварване | Вж. приложения Б 5, Б 6, В 1 до В 56 |
| Характерни съпротивления и премествания за сеизмични натоварване | Няма оценка на изпълнението |
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# ДЕКЛАРАЦИЯ ЗА ЕКСПЛОАТАЦИОННИ ПОКАЗАТЕЛИ

№ **4 - 021 - 160089 - 2024/01**

EJOT®

b) Безопасност в случай на пожар (BWR 2)

| Основни характеристики | Показатели |
|---|---|
| Реакция при пожар | Клас A1 |
| Устойчивост на огън при натоварване на опън и срязване с и без рамо на лоста. Минимални разстояния между ръбовете и разстояния между тях | Вж. приложения C2, C7, C8, C13, C14, C17, C18, C19, C20, C37, C38, C43, C44, C45, C46, C51 и C52. |
| | |

c) Хигиена, здраве и околна среда (BWR 3)

| Основни характеристики | Показатели |
|---|---|
| Съдържание, емисии и/или изпускане на опасни вещества | Няма оценка на изпълнението |

d) Защита от шум (BWR 5)

| Основни характеристики | Показатели |
|---|---|
| | |

e) Икономия на енергия и запазване на топлината (BWR 6)

| Основни характеристики | Показатели |
|---|---|
| | |
| | |
| | |

f) Устойчиво използване на природните ресурси (BWR 7)

| Основни характеристики | Показатели |
|---|---|
| | |

Експлоатационните показатели на продукта, посочени по-горе, са в съответствие с декларираните експлоатационни показатели. Настоящата декларация за експлоатационни показатели се издава в съответствие с Регламент (ЕС) № 305/2011, като отговорността за нея се носи изцяло от посочения по-горе производител.

Подписано за и от името на производителя от:

**Dr. Jens Weber**
(Име)

**Bad Laasphe, 28.01.2025**
(Място и Дата)

(Подпис)

# PROHLÁŠENÍ O VLASTNOSTECH

č. **4 - 021 - 160089 - 2024/01**

1.) Jedinečný identifikační kód typu výrobku:

**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry (033)**

2.) Zamýšlené/zamýšlená použití:

**Kovové injektážní kotvy pro použití ve zdivu**

3.) Výrobce:

**EJOT SE & Co. KG, Market Unit Construction, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Systém/systémy POSV:

**Systém 1**

5.)

| | |
|---|---|
| Evropský dokument pro posuzování: | **EAD 330076-01-0604** |
| Evropské technické posouzení: | **ETA-16/0089** |
| Subjekt pro technické posuzování: | **DIBt - Deutsches Institut für Bautechnik, Berlin** |
| Oznámený subjekt/oznámené subjekty: | **2873 - IFSW - Technische Universität Darmstadt** |

6.) Deklarovaná vlastnost/Deklarované vlastnosti:

a) Mechanická odolnost a stabilita (BWR 1) a bezpečnost a dostupnost (BWR 4)

| základní charakteristiky | vlastnosti výrobku |
|---|---|
| Charakteristická odolnost při statickém a kvazistatickém zatížení | Viz přílohy B 5, B 6, C 1 až C 56. |
| Characteristic resistance and displacements for seismic loading | Žádný hodnocený výkon |
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# PROHLÁŠENÍ O VLASTNOSTECH

č. **4 - 021 - 160089 - 2024/01**

EJOT®

b) Bezpečnost při požáru (BWR 2)

| základní charakteristiky | vlastnosti výrobku |
|---|---|
| Reakce na oheň | Třída A1 |
| Odolnost proti požáru při zatížení tahem a smykem s a bez ramene páky. Minimální vzdálenosti a rozteče hran | Viz přílohy C2, C7, C8, C13, C14, C17, C18, C19, C20, C37, C38, C43, C44, C45, C46, C51 a C52. |
| | |

c) Hygiena, zdraví a životní prostředí (BWR 3)

| základní charakteristiky | vlastnosti výrobku |
|---|---|
| Obsah, emise a/nebo uvolňování nebezpečných látek | Žádný hodnocený výkon |

d) Ochrana proti hluku (BWR 5)

| základní charakteristiky | vlastnosti výrobku |
|---|---|
| | |

e) Úspora energie a zadržování tepla (BWR 6)

| základní charakteristiky | vlastnosti výrobku |
|---|---|
| | |
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f) Udržitelné využívání přírodních zdrojů (BWR 7)

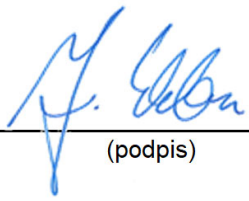
| základní charakteristiky | vlastnosti výrobku |
|---|---|
| | |

Vlastnosti výše uvedeného výrobku jsou ve shodě se souborem deklarovaných vlastností. Toto prohlášení o vlastnostech se v souladu s nařízením (EU) č. 305/2011 vydává na výhradní odpovědnost výrobce uvedeného výše.

Podepsáno za výrobce a jeho jménem:

**Dr. Jens Weber**
(jméno)

**Bad Laasphe, 28.01.2025**
(místo a datum vydání)



(podpis)

# YDEEVNEDEKLARATION

Nr.: **4 - 021 - 160089 - 2024/01**

1.) Varetypens unikke identifikationskode:

**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry (033)**

2.) Tilsigtet anvendelse:

**Injektionsankre af metal til brug i murværk**

3.) Fabrikant:

**EJOT SE & Co. KG, Market Unit Construction, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) System eller systemer til vurdering og kontrol af konstansen af ydeevnen:

**System 1**

5.)

| | |
|---|---|
| Europæisk vurderingsdokument: | **EAD 330076-01-0604** |
| Europæisk teknisk vurdering: | **ETA-16/0089** |
| Teknisk vurderingsorgan: | **DIBt - Deutsches Institut für Bautechnik, Berlin** |
| Notificeret organ/notificerede organer: | **2873 - IFSW - Technische Universität Darmstadt** |

6.) Deklareret ydeevne/deklarerede ydeevner:

a) Mekanisk modstand og stabilitet (BWR 1) og sikkerhed og tilgængelighed (BWR 4)

| Væsentlige egenskaber | Ydelse |
|---|---|
| Karakteristisk modstand ved statisk og kvasistatisk belastning | Se bilag B 5, B 6, C 1 til C 56 |
| Karakteristisk modstand og forskydninger for seismisk loading | Ingen præstation vurderet |
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# YDEEVNEDEKLARATION

Nr.: **4 - 021 - 160089 - 2024/01**

EJOT®

b) Sikkerhed ved brand (BWR 2)

| Væsentlige egenskaber | Ydelse |
|---|---|
| Reaktioner på brand | Klasse A1 |
| Modstandsdygtighed over for brand under træk- og forskydningsbelastning med og uden løftestang. Minimum kantafstande og mellemrum | Se bilag C2, C7, C8, C13, C14, C17, C18, C19, C20, C37, C38, C43, C44, C45, C46, C51 og C52. |
| | |

c) Hygiejne, sundhed og miljø (BWR 3)

| Væsentlige egenskaber | Ydelse |
|---|---|
| Indhold, udledning og/eller frigivelse af farlige stoffer | Ingen præstation vurderet |

d) Beskyttelse mod støj (BWR 5)

| Væsentlige egenskaber | Ydelse |
|---|---|
| | |

e) Energibesparelser og varmebinding (BWR 6)

| Væsentlige egenskaber | Ydelse |
|---|---|
| | |
| | |
| | |

f) Bæredygtig udnyttelse af naturressourcer (BWR 7)

| Væsentlige egenskaber | Ydelse |
|---|---|
| | |

Ydeevnen for den vare, der er anført ovenfor, er i overensstemmelse med den deklarerede ydeevne. Denne ydeevnedeklaration er udarbejdet i overensstemmelse med forordning (EU) nr. 305/2011 på eneansvar af den fabrikant, der er anført ovenfor.

Underskrevet for fabrikanten og på dennes vegne af:

**Dr. Jens Weber**
(navn)

**Bad Laasphe, 28.01.2025**
(sted og dato for udstedelse)

(underskrift)

# TOIMIVUSDEKLARATSIOON

nr **4 - 021 - 160089 - 2024/01**

1.) Tootetüübi kordumatu identifitseerimiskood:

**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry (033)**

2.) Kavandatud kasutusala(d):

**Metallist süstiankrud müüritise sissepanekuks**

3.) Tootja:

**EJOT SE & Co. KG, Market Unit Construction, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Toimivuse püsivuse hindamise ja kontrolli süsteem:

**Süsteem 1**

5.)

| | |
|---|---|
| Euroopa hindamisdokument: | **EAD 330076-01-0604** |
| Euroopa tehniline hinnang: | **ETA-16/0089** |
| Tehnilise hindamise asutus: | **DIBt - Deutsches Institut für Bautechnik, Berlin** |
| Teavitatud asutus(ed): | **2873 - IFSW - Technische Universität Darmstadt** |

6.) Deklareeritud toimivus:

a) Mehaaniline vastupidavus ja stabiilsus (BWR 1) ning ohutus ja juurdepääsetavus (BWR 4)

| Põhiomadused | Toimivus |
|---|---|
| Iseloomulik vastupidavus staatilise ja kvaasistaatilise koormuse korral | Vt lisad B 5, B 6, C 1-C 56. |
| Seismilise vastupidavuse ja nihkete iseloomulikud omadused koormus | Tulemuslikkust ei ole hinnatud |
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# TOIMIVUSDEKLARATSIOON

nr **4 - 021 - 160089 - 2024/01**

EJOT®

b) Ohutus tulekahju korral (BWR 2)

| Põhiomadused | Toimivus |
|---|---|
| Reaktsioon tulekahjule | Klass A1 |
| Tulepüsivus pinge- ja nihkekoormuse korral koos ja ilma hoovavarrega. Minimaalsed serva kaugused ja vahekaugused | Vt lisad C2, C7, C8, C13, C14, C17, C18, C19, C20, C37, C38, C43, C44, C45, C46, C51 ja C52. |
| | |

c) Hügieen, tervis ja keskkond (BWR 3)

| Põhiomadused | Toimivus |
|---|---|
| Ohtlike ainete sisaldus, heide ja/või vabanemine | Tulemuslikkust ei ole hinnatud |

d) Kaitse müra eest (BWR 5)

| Põhiomadused | Toimivus |
|---|---|
| | |

e) Energiasääst ja soojapidavus (BWR 6)

| Põhiomadused | Toimivus |
|---|---|
| | |
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| | |

f) Loodusvarade säästev kasutamine (BWR 7)

| Põhiomadused | Toimivus |
|---|---|
| | |

Eespool kirjeldatud toote toimivus vastab deklareeritud toimivusele. Käesolev toimivusdeklaratsioon on välja antud kooskõlas määrusega (EL) nr 305/2011 eespool nimetatud tootja ainuvastutusel.

Tootja poolt ja nimel allkirjastanud:

**Dr. Jens Weber**
(Nimi)

**Bad Laasphe, 28.01.2025**
(Koht ja kuupäev)

(Allkiri)

# DECLARACIÓN DE PRESTACIONES

no **4 - 021 - 160089 - 2024/01**

1.) Código de identificación única del producto tipo:

**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry (033)**

2.) Usos previstos:

**Anclajes de inyección metálicos para mampostería**

3.) Fabricante:

**EJOT SE & Co. KG, Market Unit Construction, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Sistemas de evaluación y verificación de la constancia de las prestaciones (EVCP):

**Sistema 1**

5.)

| | |
|---|---|
| Documento de evaluación europeo: | **EAD 330076-01-0604** |
| Evaluación técnica europea: | **ETA-16/0089** |
| Organismo de evaluación técnica: | **DIBt - Deutsches Institut für Bautechnik, Berlin** |
| Organismos notificados: | **2873 - IFSW - Technische Universität Darmstadt** |

6.) Prestaciones declaradas:

a) Resistencia mecánica y estabilidad (BWR 1) y seguridad y accesibilidad (BWR 4)

| Características esenciales | Prestaciones |
|---|---|
| Resistencia característica para cargas estáticas y cuasiestáticas | Véanse los anexos B 5, B 6, C 1 a C 56 |
| Resistencia y desplazamientos característicos para cargas sísmicas sísmica | No se evalúa el rendimiento |
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# DECLARACIÓN DE PRESTACIONES

no **4 - 021 - 160089 - 2024/01**

EJOT®

b) Seguridad en caso de incendio (BWR 2)

| Características esenciales | Prestaciones |
|---|---|
| Reacción al fuego | Clase A1 |
| Resistencia al fuego bajo carga de tracción y cizallamiento con y sin brazo de palanca. Distancias y separaciones mínimas de los bordes | Véanse los anexos C2, C7, C8, C13, C14, C17, C18, C19, C20, C37, C38, C43, C44, C45, C46, C51 y C52. |
| | |

c) Higiene, salud y medio ambiente (BWR 3)

| Características esenciales | Prestaciones |
|---|---|
| Contenido, emisión y/o liberación de sustancias peligrosas | No se evalúa el rendimiento |

d) Protección contra el ruido (BWR 5)

| Características esenciales | Prestaciones |
|---|---|
| | |

e) Ahorro de energía y retención del calor (BWR 6)

| Características esenciales | Prestaciones |
|---|---|
| | |
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f) Uso sostenible de los recursos naturales (BWR 7)

| Características esenciales | Prestaciones |
|---|---|
| | |

Las prestaciones del producto identificado anteriormente son conformes con el conjunto de prestaciones declaradas. La presente declaración de prestaciones se emite, de conformidad con el Reglamento (UE) no 305/2011, bajo la sola responsabilidad del fabricante arriba identificado.

Firmado por y en nombre del fabricante por:

**Dr. Jens Weber**
(nombre)

**Bad Laasphe, 28.01.2025**
(lugar y fecha de emisión)

(firma)

# SUORITUSTASOILMOITUS

Nro **4 - 021 - 160089 - 2024/01**

1.) Tuotetyypin yksilöllinen tunniste:

**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry (033)**

2.) Aiottu käyttötarkoitus (aiotut käyttötarkoitukset):

**Muurauksessa käytettävät metalliset injektioankkurit**

3.) Valmistaja:

**EJOT SE & Co. KG, Market Unit Construction, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Suoritustason pysyvyyden arvioinnissa ja varmentamisessa käytetty järjestelmä/käytetyt järjestelmät:

**Järjestelmä 1**

5.)

| | |
|---|---|
| Eurooppalainen arviointiasiakirja: | **EAD 330076-01-0604** |
| Eurooppalainen tekninen arviointi: | **ETA-16/0089** |
| Teknisestä arvioinnista vastaava laitos: | **DIBt - Deutsches Institut für Bautechnik, Berlin** |
| Ilmoitettu laitos/ilmoitetut laitokset: | **2873 - IFSW - Technische Universität Darmstadt** |

6.) Ilmoitettu suoritustaso/ilmoitetut suoritustasot:

a) Mekaaninen kestävyys ja vakavuus (BWR 1) sekä turvallisuus ja saavutettavuus (BWR 4)

| Perusominaisuudet | Tuotteen suoritustaso |
|---|---|
| Ominaiskestävyys staattisessa ja kvasistaattisessa kuormituksessa | Ks. liitteet B 5, B 6, C 1-C 56. |
| Seismisen maanjäristyksen ominaisvastus ja -siirtymät kuormitus | Suorituskykyä ei ole arvioitu |
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# SUORITUSTASOILMOITUS

Nro **4 - 021 - 160089 - 2024/01**

EJOT®

b) Turvallisuus tulipalon sattuessa (BWR 2)

| Perusominaisuudet | Tuotteen suoritustaso |
|---|---|
| Reagointi tulipaloon | Luokka A1 |
| Palonkestävyys jännitys- ja leikkauskuormituksessa, kun ja kun ilman vipuvarsi. Reunojen vähimmäisetäisyydet ja -välit | Ks. liitteet C2, C7, C8, C13, C14, C17, C18, C19, C20, C37, C38, C43, C44, C45, C46, C51 ja C52. |
| | |

c) Hygienia, terveys ja ympäristö (BWR 3)

| Perusominaisuudet | Tuotteen suoritustaso |
|---|---|
| Vaarallisten aineiden pitoisuus, päästöt ja/tai vapautuminen | Suorituskykyä ei ole arvioitu |

d) Suojaus melua vastaan (BWR 5)

| Perusominaisuudet | Tuotteen suoritustaso |
|---|---|
| | |

e) Energiansäästö ja lämmöntalteenotto (BWR 6)

| Perusominaisuudet | Tuotteen suoritustaso |
|---|---|
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f) Luonnonvarojen kestävä käyttö (BWR 7)

| Perusominaisuudet | Tuotteen suoritustaso |
|---|---|
| | |

Edellä yksilöidyn tuotteen suoritustaso on ilmoitettujen suoritustasojen joukon mukainen. Tämä suoritustasoilmoitus on asetuksen (EU) N:o 305/2011 mukaisesti annettu edellä ilmoitetun valmistajan yksinomaisella vastuulla.

Valmistajan puolesta allekirjoittanut:

**Dr. Jens Weber**
(nimi)

**Bad Laasphe, 28.01.2025**
(paikka ja päivämäärä)

(allekirjoitus)

# DÉCLARATION DES PERFORMANCES

No **4 - 021 - 160089 - 2024/01**

1.) Code d'identification unique du produit type:

**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry (033)**

2.) Usage(s) prévu(s):

**Ancrages métalliques à injection pour utilisation dans la maçonnerie**

3.) Fabricant:

**EJOT SE & Co. KG, Market Unit Construction, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Système(s) d'évaluation et de vérification de la constance des performances:

**Système 1**

5.)

| | |
|---|---|
| Document d'évaluation européen: | **EAD 330076-01-0604** |
| Évaluation technique européenne: | **ETA-16/0089** |
| Organisme d'évaluation technique: | **DIBt - Deutsches Institut für Bautechnik, Berlin** |
| Organisme(s) notifié(s): | **2873 - IFSW - Technische Universität Darmstadt** |

6.) Performance(s) déclarée(s):

a) Résistance mécanique et stabilité (BWR 1) et sécurité et accessibilité (BWR 4)

| Caractéristiques essentielles | Performances du produit |
|---|---|
| Résistance caractéristique pour les charges statiques et quasi-statiques | Voir annexes B 5, B 6, C 1 à C 56 |
| Résistance et déplacements caractéristiques pour les charges sismiques sismique | Pas de performance évaluée |
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# DÉCLARATION DES PERFORMANCES

No **4 - 021 - 160089 - 2024/01**

EJOT®

b) Sécurité en cas d'incendie (REB 2)

| Caractéristiques essentielles | Performances du produit |
|---|---|
| Réaction au feu | Classe A1 |
| Résistance au feu sous charge de traction et de cisaillement avec et sans bras de levier. Distances et espacements minimaux entre les bords | Voir annexes C2, C7, C8, C13, C14, C17, C18, C19, C20, C37, C38, C43, C44, C45, C46, C51 et C52. |
| | |

c) Hygiène, santé et environnement (REB 3)

| Caractéristiques essentielles | Performances du produit |
|---|---|
| Contenu, émission et/ou rejet de substances dangereuses | Pas de performance évaluée |

d) Protection contre le bruit (REB 5)

| Caractéristiques essentielles | Performances du produit |
|---|---|
| | |

e) Économie d'énergie et rétention de la chaleur (REB 6)

| Caractéristiques essentielles | Performances du produit |
|---|---|
| | |
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f) Utilisation durable des ressources naturelles (REB 7)

| Caractéristiques essentielles | Performances du produit |
|---|---|
| | |

Les performances du produit identifié ci-dessus sont conformes aux performances déclarées. Conformément au règlement (UE) no 305/2011, la présente déclaration des performances est établie sous la seule responsabilité du fabricant mentionné ci-dessus.

Signé pour le fabricant et en son nom par:

**Dr. Jens Weber**
(Nom)

**Bad Laasphe, 28.01.2025**
(Lieu et date)

(Signature)

# ΔΗΛΩΣΗ ΕΠΙΔΟΣΕΩΝ

Αριθ. **4 - 021 - 160089 - 2024/01**

1.) Μοναδικός κωδικός ταυτοποίησης του τύπου του προϊόντος:

**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry (033)**

2.) Προβλεπόμενη(-ες) χρήση(-εις):

**Μεταλλικά αγκύρια έγχυσης για χρήση σε τοιχοποιία**

3.) Κατασκευαστής:

**EJOT SE & Co. KG, Market Unit Construction, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Σύστημα/συστήματα AVCP (αξιολόγηση και επαλήθευση της σταθερότητας της επίδοσης):

**σύστημα 1**

5.)

| | |
|---|---|
| Ευρωπαϊκό έγγραφο αξιολόγησης: | **EAD 330076-01-0604** |
| Ευρωπαϊκή τεχνική αξιολόγηση: | **ETA-16/0089** |
| Οργανισμός τεχνικής αξιολόγησης: | **DIBt - Deutsches Institut für Bautechnik, Berlin** |
| Κοινοποιημένος(-οι) οργανισμός(-οι): | **2873 - IFSW - Technische Universität Darmstadt** |

6.) Δηλωθείσα(-ες) επίδοση(-εις):

a) Μηχανική αντίσταση και σταθερότητα (BWR 1) και ασφάλεια και προσβασιμότητα (BWR 4)

| Ουσιώδη χαρακτηριστικά | Απόδοση |
|---|---|
| Χαρακτηριστική αντοχή για στατική και οιονεί στατική φόρτιση | Βλέπε παραρτήματα Β 5, Β 6, Γ 1 έως Γ 56 |
| Χαρακτηριστικές αντιστάσεις και μετατοπίσεις για σεισμικές φόρτιση | Δεν αξιολογούνται οι επιδόσεις |
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# ΔΗΛΩΣΗ ΕΠΙΔΟΣΕΩΝ

Αριθ. **4 - 021 - 160089 - 2024/01**

EJOT®

b) Ασφάλεια σε περίπτωση πυρκαγιάς (BWR 2)

| Ουσιώδη χαρακτηριστικά | Απόδοση |
|---|---|
| Αντίδραση στη φωτιά | Κατηγορία A1 |
| Αντοχή στη φωτιά υπό εφελκυσμό και διατμητική φόρτιση με και χωρίς μοχλοβραχίονα. Ελάχιστες αποστάσεις και αποστάσεις ακμών | Βλέπε παραρτήματα Γ2, Γ7, Γ8, Γ13, Γ14, Γ17, Γ18, Γ19, Γ20, Γ37, Γ38, Γ43, Γ44, Γ45, Γ46, Γ51 και Γ52. |
| | |

c) Υγιεινή, υγεία και περιβάλλον (BWR 3)

| Ουσιώδη χαρακτηριστικά | Απόδοση |
|---|---|
| Περιεχόμενο, εκπομπή ή/και απελευθέρωση επικίνδυνων ουσιών | Δεν αξιολογούνται οι επιδόσεις |

d) Προστασία από θόρυβο (BWR 5)

| Ουσιώδη χαρακτηριστικά | Απόδοση |
|---|---|
| | |

e) Εξοικονόμηση ενέργειας και συγκράτηση θερμότητας (BWR 6)

| Ουσιώδη χαρακτηριστικά | Απόδοση |
|---|---|
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f) Εξοικονόμηση ενέργειας και συγκράτηση θερμότητας (BWR 7)

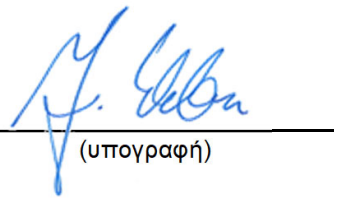
| Ουσιώδη χαρακτηριστικά | Απόδοση |
|---|---|
| | |

Η επίδοση του προϊόντος που ταυτοποιείται ανωτέρω είναι σύμφωνη με τη (τις) δηλωθείσα(-ες) επίδοση(-εις). Η δήλωση αυτή των επιδόσεων συντάσσεται, σύμφωνα με τον κανονισμό (ΕΕ) αριθ. 305/2011, με αποκλειστική ευθύνη του κατασκευαστή που ταυτοποιείται ανωτέρω.

Υπογραφή για λογαριασμό και εξ ονόματος του κατασκευαστή από:

**Dr. Jens Weber**
(όνομα)

**Bad Laasphe, 28.01.2025**
(τόπος και ημερομηνία έκδοσης)


(υπογραφή)

# IZJAVA O SVOJSTVIMA

Br. **4 - 021 - 160089 - 2024/01**

1.) Jedinstvena identifikacijska oznaka vrste proizvoda:

**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry (033)**

2.) Namjena/namjene:

**Sidra za brizganje metala za upotrebu u zidanju**

3.) Proizvođač:

**EJOT SE & Co. KG, Market Unit Construction, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Sustav/sustavi za ocjenu i provjeru stalnosti svojstava (AVCP):

**Sustav 1**

5.)

| | |
|---|---|
| Europski dokument za ocjenjivanje: | **EAD 330076-01-0604** |
| Europska tehnička ocjena: | **ETA-16/0089** |
| Tijelo za tehničko ocjenjivanje: | **DIBt - Deutsches Institut für Bautechnik, Berlin** |
| Prijavljeno tijelo/prijavljena tijela: | **2873 - IFSW - Technische Universität Darmstadt** |

6.) Objavljena svojstva:

a) Mehanička otpornost i stabilnost (BWR 1) i sigurnost i pristupačnost (BWR 4)

| Bitne karakteristike | Svojstva |
|---|---|
| Karakteristična otpornost za statičko i kvazistatičko opterećenje | Vidjeti priloge B 5, B 6, C 1 do C 56 |
| Karakteristični otpor i pomaci za seizmičke učitavanje | Nije procijenjena izvedba |
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# IZJAVA O SVOJSTVIMA

Br. **4 - 021 - 160089 - 2024/01**

EJOT®

b) Sigurnost u slučaju požara (BWR 2)

| Bitne karakteristike | Svojstva |
|---|---|
| Reakcija na vatru | Klasa A1 |
| Otpornost na vatru pod zatezanjem i posmičnim opterećenjem s i bez poluge. Minimalni razmak između rubova i razmak | Vidjeti priloge C2, C7, C8, C13, C14, C17, C18, C19, C20, C37, C38, C43, C44, |
| | |

c) Higijena, zdravlje i okoliš (BWR 3)

| Bitne karakteristike | Svojstva |
|---|---|
| Sadržaj, emisija i/ili ispuštanje opasnih tvari | Nije procijenjena izvedba |

d) Zaštita od buke (BWR 5)

| Bitne karakteristike | Svojstva |
|---|---|
| | |

e) Ušteda energije i zadržavanje topline (BWR 6)

| Bitne karakteristike | Svojstva |
|---|---|
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f) Održivo korištenje prirodnih resursa (BWR 7)

| Bitne karakteristike | Svojstva |
|---|---|
| | |

Prije utvrđeno svojstvo proizvoda u skladu je s objavljenim svojstvima. Ova izjava o svojstvima izdaje se, u skladu s Uredbom (EU) br. 305/2011, pod isključivom odgovornošću prethodno utvrđenog proizvođača.

Za proizvođača i u njegovo ime potpisao:

**Dr. Jens Weber**
(ime)

**Bad Laasphe, 28.01.2025**
(Mjesto i datum izdavanja)

(potpis)

# TELJESÍTMÉNYNYILATKOZAT

Száma: **4 - 021 - 160089 - 2024/01**

1.) A terméktípus egyedi azonosító kódja:

**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry (033)**

2.) Felhasználás célja(i):

**Fém injektálási horgonyok falazatba való beépítéshez**

3.) Gyártó:

**EJOT SE & Co. KG, Market Unit Construction, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Az AVCP-rendszer(ek):

**rendszer 1**

5.)

| | |
|---|---|
| Az európai értékelési dokumentum: | **EAD 330076-01-0604** |
| Európai műszaki értékelés: | **ETA-16/0089** |
| A műszaki értékelést végző szerv: | **DIBt - Deutsches Institut für Bautechnik, Berlin** |
| Bejelentett szerv(ek): | **2873 - IFSW - Technische Universität Darmstadt** |

6.) A nyilatkozatban szereplő teljesítmény(ek):

a) Mechanikai ellenállás és stabilitás (BWR 1), biztonság és elérhetőség (BWR 4)

| Lényeges termékjellemzők | Termék teljesítménye |
|---|---|
| Jellemző ellenállás statikus és kvázi-statikus terhelés esetén | Lásd a B 5., B 6., C 1-C 56. mellékletet. |
| Jellemző ellenállás és elmozdulások a szeizmikus terhelés | Nincs értékelt teljesítmény |
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# TELJESÍTMÉNYNYILATKOZAT

Száma: **4 - 021 - 160089 - 2024/01**

EJOT®

b) Biztonság tűz esetén (BWR 2)

| Lényeges termékjellemzők | Termék teljesítménye |
|---|---|
| Tűzre adott reakció | A1 osztály |
| Tűzállóság húzó- és nyíróterhelés alatt, és kar nélkül. Minimális éltávolságok és élközök | Lásd a C2, C7, C8, C13, C14, C17, C18, C19, C20, C37, C38, C43, C44, C45, C46, C51 és C52 mellékletet. |
| | |

c) Higiénia, egészség és környezet (BWR 3)

| Lényeges termékjellemzők | Termék teljesítménye |
|---|---|
| Veszélyes anyagok tartalma, kibocsátása és/vagy kibocsátása | Nincs értékelt teljesítmény |

d) Zaj elleni védelem (BWR 5)

| Lényeges termékjellemzők | Termék teljesítménye |
|---|---|
| | |

e) Energiatakarékosság és hővisszatartás (BWR 6)

| Lényeges termékjellemzők | Termék teljesítménye |
|---|---|
| | |
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f) A természeti erőforrások fenntartható használata (BWR 7)

| Lényeges termékjellemzők | Termék teljesítménye |
|---|---|
| | |

A fent azonosított termék teljesítménye megfelel a bejelentett teljesítmény(ek)nek. A 305/2011/EU rendeletnek megfelelően e teljesítménynyilatkozat kiadásáért kizárólag a fent meghatározott gyártó a felelős.

A gyártó nevében és részéről aláíró személy:

**Dr. Jens Weber**
(név)

**Bad Laasphe, 28.01.2025**
(hely és kiállítás dátuma)

(aláírás)

# DICHIARAZIONE DI PRESTAZIONE

N. **4 - 021 - 160089 - 2024/01**

1.) Codice di identificazione unico del prodotto-tipo:

**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry (033)**

2.) Usi previsti:

**Ancoraggi ad iniezione in metallo per l'utilizzo in muratura**

3.) Fabbricante:

**EJOT SE & Co. KG, Market Unit Construction, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Sistemi di VVCP:

**Sistema 1**

5.)

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|---|---|
| Documento per la valutazione europea: | **EAD 330076-01-0604** |
| Valutazione tecnica europea: | **ETA-16/0089** |
| Organismo di valutazione tecnica: | **DIBt - Deutsches Institut für Bautechnik, Berlin** |
| Organismi notificati: | **2873 - IFSW - Technische Universität Darmstadt** |

6.) Prestazioni dichiarate:

a) Resistenza meccanica e stabilità (BWR 1) e sicurezza e accessibilità (BWR 4)

| Caratteristiche essenziali | Prestazione |
|---|---|
| Resistenza caratteristica per carichi statici e quasi statici | Cfr. gli allegati B 5, B 6, da C 1 a C 56. |
| Resistenza e spostamenti caratteristici per il carico sismico". carico sismico | Nessuna prestazione valutata |
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# DICHIARAZIONE DI PRESTAZIONE

N. **4 - 021 - 160089 - 2024/01**

EJOT®

b) Sicurezza in caso di incendio (BWR 2)

| Caratteristiche essenziali | Prestazione |
|---|---|
| Reazione al fuoco | Classe A1 |
| Resistenza al fuoco sotto carico di tensione e di taglio con e senza braccio di leva. Distanze minime tra i bordi e spaziatura | Cfr. allegati C2, C7, C8, C13, C14, C17, C18, C19, C20, C37, C38, C43, C44, C45, C46, C51 e C52. |
| | |

c) Igiene, salute e ambiente (BWR 3)

| Caratteristiche essenziali | Prestazione |
|---|---|
| Contenuto, emissione e/o rilascio di sostanze pericolose | Nessuna prestazione valutata |

d) Protezione contro il rumore (BWR 5)

| Caratteristiche essenziali | Prestazione |
|---|---|
| | |

e) Economia energetica e ritenzione di calore (BWR 6)

| Caratteristiche essenziali | Prestazione |
|---|---|
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f) Uso sostenibile delle risorse naturali (BWR 7)

| Caratteristiche essenziali | Prestazione |
|---|---|
| | |

La prestazione del prodotto sopra identificato è conforme all'insieme delle prestazioni dichiarate. La presente dichiarazione di responsabilità viene emessa, in conformità al regolamento (UE) n. 305/2011, sotto la sola responsabilità del fabbricante sopra identificato.

Firmato a nome e per conto del fabbricante da:

**Dr. Jens Weber**
(nome)

**Bad Laasphe, 28.01.2025**
(luogo e data del rilascio)

(firma)

# EKSPLOATACINIŲ SAVYBIŲ DEKLARACIJA

Nr. **4 - 021 - 160089 - 2024/01**

1.) Produkto tipo unikalus identifikavimo kodas:

**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry (033)**

2.) Naudojimo paskirtis (-ys):

**Metaliniai injekciniai inkarai, skirti naudoti mūre**

3.) Gamintojas:

**EJOT SE & Co. KG, Market Unit Construction, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Eksploatacinių savybių pastovumo vertinimo ir tikrinimo sistema (-os):

**Sistema 1**

5.)

| | |
|---|---|
| Europos vertinimo dokumentas: | **EAD 330076-01-0604** |
| Europos techninis įvertinimas: | **ETA-16/0089** |
| Techninio vertinimo įstaiga: | **DIBt - Deutsches Institut für Bautechnik, Berlin** |
| Notifikuotoji (-osios) įstaiga (-os): | **2873 - IFSW - Technische Universität Darmstadt** |

6.) Deklaruojama (-os) eksploatacinė (-ės) savybė (-ės):

a) Mechaninis atsparumas ir stabilumas (BWR 1) ir saugumas bei prieinamumas (BWR 4)

| Esminės charakteristikos | Eksploatacinės savybės |
|---|---|
| Charakteristinis atsparumas statinei ir kvazistatinei apkrovai | Žr. B 5, B 6, C 1-C 56 priedus. |
| Charakteristinis atsparumas ir poslinkiai seisminiams poveikiams apkrova | Veiklos rezultatai neįvertinti |
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# EKSPLOATACINIŲ SAVYBIŲ DEKLARACIJA

Nr. **4 - 021 - 160089 - 2024/01**

EJOT®

b) Sauga gaisro atveju (BWR 2)

| Esminės charakteristikos | Eksploatacinės savybės |
|---|---|
| Reakcija į ugnį | A1 klasė |
| Atsparumas ugniai veikiant tempimo ir šlyties apkrovai su ir be svirties rankenos. Mažiausi atstumai tarp kraštų ir atstumai tarp jų | Žr. priedus C2, C7, C8, C13, C14, C17, C18, C19, C20, C37, C38, C43, C44, C45, C46, C51 ir C52. |
| | |

c) Higiena, sveikata ir aplinka (BWR 3)

| Esminės charakteristikos | Eksploatacinės savybės |
|---|---|
| Pavojingų medžiagų kiekis, išmetimas ir (arba) išleidimas | Veiklos rezultatai neįvertinti |

d) Apsauga nuo triukšmo (BWR 5)

| Esminės charakteristikos | Eksploatacinės savybės |
|---|---|
| | |

e) Energijos taupymas ir šilumos išsaugojimas (BWR 6)

| Esminės charakteristikos | Eksploatacinės savybės |
|---|---|
| | |
| | |
| | |

f) Tvarus gamtos išteklių naudojimas (BWR 7)

| Esminės charakteristikos | Eksploatacinės savybės |
|---|---|
| | |

Nurodyto produkto eksploatacinės savybės atitinka visas deklaruotas eksploatacines savybes. Ši eksploatacinių savybių deklaracija pateikiama vadovaujantis Reglamentu (ES) Nr. 305/2011, atsakomybė už jos turinį tenka tik joje nurodytam gamintojui.

Pasirašyta (gamintojo ir jo vardu):

**Dr. Jens Weber**
(vardas)

**Bad Laasphe, 28.01.2025**
(išdavimo vieta ir data)

(parašas)

# EKSPLUATĀCIJAS ĪPAŠĪBU DEKLARĀCIJA

Nr. **4 - 021 - 160089 - 2024/01**

1.) Unikālais izstrādājuma tipa identifikācijas numurs:

**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry (033)**

2.) Paredzētais izmantojums:

**Metāla injekcijas enkuri izmantošanai mūrī**

3.) Ražotājs:

**EJOT SE & Co. KG, Market Unit Construction, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Ekspluatācijas īpašību noturības novērtējuma un pārbaudes (AVCP) sistēma(-as):

**Sistēma 1**

5.)

| | |
|---|---|
| Eiropas novērtējuma dokuments: | **EAD 330076-01-0604** |
| Eiropas tehniskais novērtējums: | **ETA-16/0089** |
| Tehniskā novērtējuma iestāde: | **DIBt - Deutsches Institut für Bautechnik, Berlin** |
| Paziņotā(-ās) iestāde(-es): | **2873 - IFSW - Technische Universität Darmstadt** |

6.) Deklarētā(-ās) ekspluatācijas īpašība(-as):

a) Mehāniskā izturība un stabilitāte (BWR 1) un drošība un pieejamība (BWR 4)

| Būtiskie raksturlielumi | Ekspluatācijas īpašības |
|---|---|
| Raksturīgā pretestība statiskai un kvazi-statiskai slodzei | Skatīt B 5, B 6, C 1 līdz C 56 pielikumu. |
| Raksturīgā pretestība un pārvietojumi seismiskajai iedarbībai slodzei | Veiktspēja nav novērtēta |
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# EKSPLUATĀCIJAS ĪPAŠĪBU DEKLARĀCIJA

Nr. **4 - 021 - 160089 - 2024/01**

EJOT®

b) Drošība ugunsgrēka gadījumā (BWR 2)

| Būtiskie raksturlielumi | Ekspluatācijas īpašības |
|---|---|
| Reakcija uz ugunsgrēku | A1 klase |
| Ugunsizturība pie stiepes un bīdes slodzes ar un bez sviras rokas. Minimālie attālumi starp malām un attālumi | Skatīt C2, C7, C8, C13, C14, C17, C18, C19, C20, C37, C38, C43, C44, C45, C46, C51 un C52 pielikumu. |
| | |

c) Higiēna, veselība un vide (BWR 3)

| Būtiskie raksturlielumi | Ekspluatācijas īpašības |
|---|---|
| Bīstamu vielu saturs, emisija un/vai izdalīšanās | Veiktspēja nav novērtēta |

d) Aizsardzība pret troksni (BWR 5)

| Būtiskie raksturlielumi | Ekspluatācijas īpašības |
|---|---|
| | |

e) Enerģijas ekonomija un siltuma saglabāšana (BWR 6)

| Būtiskie raksturlielumi | Ekspluatācijas īpašības |
|---|---|
| | |
| | |
| | |

f) Dabas resursu ilgtspējīga izmantošana (BWR 7)

| Būtiskie raksturlielumi | Ekspluatācijas īpašības |
|---|---|
| | |

Iepriekš norādītā izstrādājuma ekspluatācijas īpašības atbilst deklarēto ekspluatācijas īpašību kopumam. Šī ekspluatācijas īpašību deklarācija izdota saskaņā ar Regulu (ES) Nr. 305/2011, un par to ir atbildīgs vienīgi iepriekš norādītais ražotājs.

Parakstīts ražotāja vārdā:

**Dr. Jens Weber**
(Vārds)

**Bad Laasphe, 28.01.2025**
(Izsniegšanas vieta un datums)

(Paraksts)

# DIKJARAZZJONI TA' PRESTAZZJONI

Nru. **4 - 021 - 160089 - 2024/01**

1.) Kodiċi uniku ta' identifikazzjoni tat-tip tal-prodott:

**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry (033)**

2.) Użu/i intenzjonat/i:

**Ankri tal-injezzjoni tal-metall għall-użu fil-ġebel**

3.) Manifattur:

**EJOT SE & Co. KG, Market Unit Construction, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Sistema/i ta' AVCP:

**Sistema 1**

5.)

| | |
|---|---|
| Dokument Ewropew ta' Valutazzjoni: | **EAD 330076-01-0604** |
| Valutazzjoni Teknika Ewropea: | **ETA-16/0089** |
| Korp tal-Valutazzjoni Teknika: | **DIBt - Deutsches Institut für Bautechnik, Berlin** |
| Korp/i nnotifikat/i: | **2873 - IFSW - Technische Universität Darmstadt** |

6.) Prestazzjoni/jiet ddikjarata/i:

a) Mehāniskā pretestība un stabilitāte (BPP 1) un drošība un pieejamība (BPP 4)

| Karatteristiċi essenzjali | Prestazzjoni |
|---|---|
| Reżistenza karatteristika għat-tagħbija statika u kważi statika | Ara l-Annessi B 5, B 6, C 1 sa C 56 |
| Reżistenza karatteristika u spostamenti għal sismiċi Tagħbija | L-ebda prestazzjoni ma ġiet ivvalutata |
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# DIKJARAZZJONI TA' PRESTAZZJONI

Nru. **4 - 021 - 160089 - 2024/01**

EJOT®

b) Sigurtà fil-każ ta 'nar (BWR 2)

| Karatteristiċi essenzjali | Prestazzjoni |
|---|---|
| Reazzjoni għan-nar | Klassi A1 |
| Ir-reżistenza għan-nar taħt tensjoni u t-tagħbija tal-shear bi u mingħajr driegħ tal-lieva. Distanzi minimi tat-tarf u spazjar | Ara l-Annessi C2, C7, C8, C13, C14, C17, C18, C19, C20, C37, C38, C43, C44, |
| | |

c) Iġjene, saħħa u ambjent (BWR 3)

| Karatteristiċi essenzjali | Prestazzjoni |
|---|---|
| Kontenut, emissjoni u/jew rilaxx ta' sustanzi perikoluż | L-ebda prestazzjoni ma ġiet ivvalutata |

d) Protezzjoni kontra l-istorbju (BWR 5)

| Karatteristiċi essenzjali | Prestazzjoni |
|---|---|
| | |

e) Ekonomija tal-enerġija u żamma tas-sħana (BWR 6)

| Karatteristiċi essenzjali | Prestazzjoni |
|---|---|
| | |
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| | |

f) Użu sostenibbli tar-riżorsi naturali (BWR 7)

| Karatteristiċi essenzjali | Prestazzjoni |
|---|---|
| | |

Il-prestazzjoni tal-prodott identifikat hawn fuq hija konformi mal-prestazzjonijiet iddikjarati. Din id-dikjarazzjoni ta' prestazzjoni hija maħruġa, skont ir-Regolament (UE) Nru 305/2011, taħt ir-responsabbiltà unika tal-manifattur identifikat hawn fuq.

Iffirmat għal u f'isem il-manifattur minn:

**Dr. Jens Weber**
(isem)

**Bad Laasphe, 28.01.2025**
(post u data tal-ħruġ)

(firma)

# PRESTATIEVERKLARING

Nr. **4 - 021 - 160089 - 2024/01**

1.) Unieke identificatiecode van het producttype:

**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry (033)**

2.) Beoogd(e) gebruik(en):

**Metalen injectieankers voor gebruik in metselwerk**

3.) Fabrikant:

**EJOT SE & Co. KG, Market Unit Construction, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Het systeem of de systemen voor de beoordeling en verificatie van de prestatiebestendigheid:

**Systeem 1**

5.)

| | |
|---|---|
| Europees beoordelingsdocument: | **EAD 330076-01-0604** |
| Europese technische beoordeling: | **ETA-16/0089** |
| Technische beoordelingsinstantie: | **DIBt - Deutsches Institut für Bautechnik, Berlin** |
| Aangemelde instantie(s): | **2873 - IFSW - Technische Universität Darmstadt** |

6.) Aangegeven prestatie(s):

a) Mehāniskā izturība un stabilitāte (BWR 1) un drošība un pieejamība (BWR 4)

| Essentiële kenmerken | Prestaties |
|---|---|
| Karakteristieke weerstand voor statische en quasi-statische belasting | Zie bijlagen B 5, B 6, C 1 tot en met C 56. |
| Karakteristieke weerstand en verplaatsingen voor seismische belasting | Geen prestatie beoordeeld |
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# PRESTATIEVERKLARING

Nr. **4 - 021 - 160089 - 2024/01**

EJOT®

b) Veiligheid in geval van brand (BWR 2)

| Essentiële kenmerken | Prestaties |
|---|---|
| Reactie op vuur | Klasse A1 |
| Weerstand tegen brand onder trek- en schuifbelasting met en zonder hefboomarm. Minimumafstanden en afstanden tussen randen | Zie bijlagen C2, C7, C8, C13, C14, C17, C18, C19, C20, C37, C38, C43, C44, C45, C46, C51 en C52. |
| | |

c) Hygiëne, gezondheid en het milieu (BWR 3)

| Essentiële kenmerken | Prestaties |
|---|---|
| Inhoud, emissie en/of vrijkomen van gevaarlijke stoffen | Geen prestatie beoordeeld |

d) Bescherming tegen lawaai (BWR 5)

| Essentiële kenmerken | Prestaties |
|---|---|
| | |

e) Energiebesparing en warmtebehoud (BWR 6)

| Essentiële kenmerken | Prestaties |
|---|---|
| | |
| | |
| | |

f) Duurzaam gebruik van natuurlijke hulpbronnen (BWR 7)

| Essentiële kenmerken | Prestaties |
|---|---|
| | |

De prestaties van het hierboven omschreven product zijn conform de aangegeven prestaties. Deze prestatieverklaring wordt in overeenstemming met Verordening (EU) nr. 305/2011 onder de exclusieve verantwoordelijkheid van de hierboven vermelde fabrikant verstrekt.

Ondertekend voor en namens de fabrikant door:

**Dr. Jens Weber**
(naam)

**Bad Laasphe, 28.01.2025**
(plaats en datum van afgifte)

(handtekening)

# DEKLARACJA WŁAŚCIWOŚCI UŻYTKOWYCH

Nr **4 - 021 - 160089 - 2024/01**

1.) Niepowtarzalny kod identyfikacyjny typu wyrobu:

**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry (033)**

2.) Zamierzone zastosowanie lub zastosowania:

**Metalowe kotwy iniekcyjne do stosowania w murze**

3.) Producent:

**EJOT SE & Co. KG, Market Unit Construction, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) System(-y) oceny i weryfikacji stałości właściwości użytkowych:

**system 1**

5.)

| | |
|---|---|
| Europejski Dokument Oceny: | **EAD 330076-01-0604** |
| Europejska Ocena Techniczna: | **ETA-16/0089** |
| Jednostka ds. Oceny Technicznej: | **DIBt - Deutsches Institut für Bautechnik, Berlin** |
| Jednostka lub Jednostki Notyfikowane: | **2873 - IFSW - Technische Universität Darmstadt** |

6.) Deklarowane właściwości użytkowe:

a) Nośność i stateczność (BWR 1) oraz bezpieczeństwo użytkowania (BWR 4)

| Zasadnicze charakterystyki | Właściwości użytkowe |
|---|---|
| Charakterystyczna odporność na obciążenia statyczne i quasi-statyczne | Patrz załączniki B 5, B 6, C 1 do C 56 |
| Charakterystyczny opór i przemieszczenia dla obciążenia sejsmicznego loading | Nie oceniono wydajności |
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# DEKLARACJA WŁAŚCIWOŚCI UŻYTKOWYCH

Nr **4 - 021 - 160089 - 2024/01**

EJOT®

b) Bezpieczeństwo pożarowe (BWR 2)

| Zasadnicze charakterystyki | Właściwości użytkowe |
|---|---|
| Reakcja na ogień | Klasa A1 |
| Odporność na ogień pod obciążeniem rozciągającym i ścinającym z i bez ramienia dźwigni. Minimalne odległości i odstępy między krawędziami | Zob. załączniki C2, C7, C8, C13, C14, C17, C18, C19, C20, C37, C38, C43, C44, C45, C46, C51 i C52. |
| | |

c) Higiena, zdrowie i środowisko (BWR 3)

| Zasadnicze charakterystyki | Właściwości użytkowe |
|---|---|
| Zawartość, emisja i/lub uwalnianie substancji niebezpiecznych | Nie oceniono wydajności |

d) Ochrona przed hałasem (BWR 5)

| Zasadnicze charakterystyki | Właściwości użytkowe |
|---|---|
| | |

e) Oszczędność energii i zatrzymywanie ciepła (BWR 6)

| Zasadnicze charakterystyki | Właściwości użytkowe |
|---|---|
| | |
| | |
| | |

f) Zrównoważone wykorzystanie zasobów naturalnych (BWR 7)

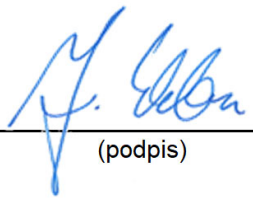
| Zasadnicze charakterystyki | Właściwości użytkowe |
|---|---|
| | |

Właściwości użytkowe określonego powyżej wyrobu są zgodne z zestawem deklarowanych właściwości użytkowych. Niniejsza deklaracja właściwości użytkowych wydana zostaje zgodnie z Rozporządzeniem (UE) nr 305/2011 na wyłączną odpowiedzialność producenta określonego powyżej.

W imieniu producenta podpisał(-a):

**dr Jens Weber**
(nazwisko)

**Bad Laasphe, 28.01.2025**
(miejsce i data wydania)



(podpis)

# DECLARAÇÃO DE DESEMPENHO

N.o **4 - 021 - 160089 - 2024/01**

1.) Código de identificação único do produto-tipo:

**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry (033)**

2.) Utilização(ões) prevista(s)

**Âncoras de injeção de metal para utilização em alvenaria**

3.) Fabricante:

**EJOT SE & Co. KG, Market Unit Construction, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Sistema(s) de avaliação e verificação da regularidade do desempenho (AVCP):

**Sistema 1**

5.)

| | |
|---|---|
| Documento de Avaliação Europeu: | **EAD 330076-01-0604** |
| Avaliação Técnica Europeia | **ETA-16/0089** |
| Organismo de Avaliação Técnica: | **DIBt - Deutsches Institut für Bautechnik, Berlin** |
| Organismo(s) notificado (s): | **2873 - IFSW - Technische Universität Darmstadt** |

6.) Desempenho(s) declarado(s):

a) Resistência mecânica e estabilidade (BWR 1) e segurança e acessibilidade (BWR 4)

| Características essenciais | Desempenho |
|---|---|
| Resistência caraterística para cargas estáticas e quase-estáticas | Ver anexos B 5, B 6, C 1 a C 56 |
| Resistência e deslocamentos caraterísticos para cargas sísmicas sísmico | Nenhum desempenho avaliado |
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# DECLARAÇÃO DE DESEMPENHO

N.o **4 - 021 - 160089 - 2024/01**

EJOT®

b) Segurança em caso de incêndio (BWR 2)

| Características essenciais | Desempenho |
|---|---|
| Reacção ao fogo | Classe A1 |
| Resistência ao fogo sob tensão e carga de cisalhamento com e sem braço de alavanca. Distâncias e espaçamentos mínimos entre bordos | Ver anexos C2, C7, C8, C13, C14, C17, C18, C19, C20, C37, C38, C43, C44, C45, C46, C51 e C52 |
| | |

c) Higiene, saúde e meio ambiente (BWR 3)

| Características essenciais | Desempenho |
|---|---|
| Conteúdo, emissão e/ou libertação de substâncias perigosas | Nenhum desempenho avaliado |

d) Protecção contra o ruído (BWR 5)

| Características essenciais | Desempenho |
|---|---|
| | |

e) Economia de energia e retenção de calor (BWR 6)

| Características essenciais | Desempenho |
|---|---|
| | |
| | |
| | |

f) Utilização sustentável dos recursos naturais (BWR 7)

| Características essenciais | Desempenho |
|---|---|
| | |

O desempenho do produto identificado acima está em conformidade com o conjunto de desempenhos declarados. A presente declaração de desempenho é emitida, em conformidade com o Regulamento (UE) n.o 305/2011, sob a exclusiva responsabilidade do fabricante identificado acima.

Assinado por e em nome do fabricante por:

**Dr. Jens Weber**
(nome)

**Bad Laasphe, 28.01.2025**
(local e data de emissão)

(assinatura)

# DECLARAȚIA DE PERFORMANȚĂ

Nr, **4 - 021 - 160089 - 2024/01**

1.) Cod unic de identificare al produsului-tip:

**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry (033)**

2.) Utilizare (utilizări) preconizată (preconizate):

**Ancore de injecție metalice pentru utilizare în zidărie**

3.) Fabricant:

**EJOT SE & Co. KG, Market Unit Construction, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Sistemul (sistemele) de evaluare și de verificare a constanței performanței:

**Sistemul 1**

5.)

| | |
|---|---|
| Documentul de evaluare european: | **EAD 330076-01-0604** |
| Evaluarea tehnică europeană: | **ETA-16/0089** |
| Organismul de evaluare tehnică: | **DIBt - Deutsches Institut für Bautechnik, Berlin** |
| Organism (organisme) notificat(e): | **2873 - IFSW - Technische Universität Darmstadt** |

6.) Performanța (performanțe) declarată (declarate):

a) Rezistența mecanică și stabilitatea (BWR 1) și siguranța și accesibilitatea (BWR 4)

| Caracteristici esenţiale | Performanţa produsului |
|---|---|
| Rezistența caracteristică pentru sarcini statice și cvasi-statice | A se vedea anexele B 5, B 6, C 1 până la C 56 |
| Rezistența și deplasările caracteristice pentru încărcarea seismică de încărcare | Nicio performanță evaluată |
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# DECLARAȚIA DE PERFORMANȚĂ

Nr, **4 - 021 - 160089 - 2024/01**

EJOT®

b) Siguranța în caz de incendiu (BWR 2)

| Caracteristici esenţiale | Performanţa produsului |
|---|---|
| Reacția la foc | Clasa A1 |
| Rezistența la foc sub sarcină de tracțiune și forfecare cu și fără braț de pârghie. Distanțe minime între muchii și spații | A se vedea anexele C2, C7, C8, C13, C14, C17, C18, C19, C20, C37, C38, C43, C44, C45, C46, C51 și C52 |
| | |

c) Igiena, sănătatea și mediul (BWR 3)

| Caracteristici esenţiale | Performanţa produsului |
|---|---|
| Conținutul, emisia și/sau eliberarea de substanțe periculoase | Nicio performanță evaluată |

d) Protecție împotriva zgomotului (BWR 5)

| Caracteristici esenţiale | Performanţa produsului |
|---|---|
| | |

e) Economie de energie și păstrarea căldurii (BWR 6)

| Caracteristici esenţiale | Performanţa produsului |
|---|---|
| | |
| | |
| | |

f) Utilizarea durabilă a resurselor naturale (BWR 7)

| Caracteristici esenţiale | Performanţa produsului |
|---|---|
| | |

Performanța produsului identificat mai sus este în conformitate cu setul de performanțe declarate. Această declarație de performanță este eliberată în conformitate cu Regulamentul (UE) nr. 305/2011, pe răspunderea exclusivă a fabricantului identificat mai sus.

Semnată pentru și în numele fabricantului de către:

**Dr. Jens Weber**
(numele)

**Bad Laasphe, 28.01.2025**
(locul şi data emiterii)

(semnătură)

# PRESTANDADEKLARATION

Nr **4 - 021 - 160089 - 2024/01**

1.) Produkttypens unika identifikationskod:

**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry (033)**

2.) Avsedd användning/avsedda användningar:

**Injektionsankare av metall för användning i murverk**

3.) Tillverkare:

**EJOT SE & Co. KG, Market Unit Construction, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) System för bedömning och fortlöpande kontroll av prestanda:

**Systen 1**

5.)

| | |
|---|---|
| Europeiskt bedömningsdokument: | **EAD 330076-01-0604** |
| Europeisk teknisk bedömning: | **ETA-16/0089** |
| Tekniskt bedömningsorgan: | **DIBt - Deutsches Institut für Bautechnik, Berlin** |
| Anmält/anmälda organ: | **2873 - IFSW - Technische Universität Darmstadt** |

6.) Angiven prestanda:

a) Mekanisk motstånd och stabilitet (BWR 1) och säkerhet och tillgänglighet (BWR 4)

| Väsentliga egenskaper | Prestanda |
|---|---|
| Karakteristiskt motstånd för statiska och kvasistatiska belastningar | Se bilagorna B 5, B 6, C 1 till C 56. |
| Karakteristiska motstånd och förskjutningar för seismisk belastning | Ingen prestationsbedömning |
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# PRESTANDADEKLARATION

Nr **4 - 021 - 160089 - 2024/01**

EJOT®

b) Säkerhet vid brand (BWR 2)

| Väsentliga egenskaper | Prestanda |
|---|---|
| Reaktion på brand | Klass A1 |
| Motstånd mot brand under drag- och skjuvbelastning med och utan hävstångsarm. Minsta kantavstånd och inbördes avstånd | Se bilagorna C2, C7, C8, C13, C14, C17, C18, C19, C20, C37, C38, C43, C44, C45, C46, C51 och C52. |
| | |

c) Hygien, hälsa och miljö (BWR 3)

| Väsentliga egenskaper | Prestanda |
|---|---|
| Innehåll, utsläpp och/eller avgivning av farliga ämnen | Ingen prestationsbedömning |

d) Skydd mot buller (BWR 5)

| Väsentliga egenskaper | Prestanda |
|---|---|
| | |

e) Energihushållning och värmehållning (BWR 6)

| Väsentliga egenskaper | Prestanda |
|---|---|
| | |
| | |
| | |

f) Hållbar användning av naturresurser (BWR 7)

| Väsentliga egenskaper | Prestanda |
|---|---|
| | |

Prestandan för ovanstående produkt överensstämmer med den angivna prestandan. Denna prestandadeklaration har utfärdats i enlighet med förordning (EU) nr 305/2011 på eget ansvar av den tillverkare som anges ovan.

Undertecknad på tillverkarens vägnar av:

**Dr. Jens Weber**
(namn)

**Bad Laasphe, 28.01.2025**
(Iplats and datum)


(signatur)

# VYHLÁSENIE O PARAMETROCH

č. **4 - 021 - 160089 - 2024/01**

1.) Jedinečný identifikačný kód typu výrobku:

**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry (033)**

2.) Zamýšľané použitie/použitia:

**Kovové injektážne kotvy na použitie v murive**

3.) Výrobca:

**EJOT SE & Co. KG, Market Unit Construction, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Systém(-y) posudzovania a overovania nemennosti parametrov:

**Systém 1**

5.)

| | |
|---|---|
| Európsky hodnotiaci dokument: | **EAD 330076-01-0604** |
| Európske technické posúdenie: | **ETA-16/0089** |
| Orgán technického posudzovania: | **DIBt - Deutsches Institut für Bautechnik, Berlin** |
| Notifikovaný(-é) subjekt(-y): | **2873 - IFSW - Technische Universität Darmstadt** |

6.) Deklarované parametre:

a) Mechanická odolnosť a stabilita (BWR 1) a bezpečnosť a dostupnosť (BWR 4)

| základné charakteristiky | vlastnosti výrobku |
|---|---|
| Charakteristická odolnosť pri statickom a kvázi statickom zaťažení | Pozri prílohy B 5, B 6, C 1 až C 56 |
| Charakteristická odolnosť a posuny pre seizmické zaťaženie | Nehodnotí sa žiadna výkonnosť |
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# VYHLÁSENIE O PARAMETROCH

č. **4 - 021 - 160089 - 2024/01**

EJOT®

b) Bezpečnosť v prípade požiaru (BWR 2)

| základné charakteristiky | vlastnosti výrobku |
|---|---|
| Reakcia na požiar | Trieda A1 |
| Požiarna odolnosť pri zaťažení ťahom a šmykom s a bez pákového ramena. Minimálne vzdialenosti a rozstupy hrán | Pozri prílohy C2, C7, C8, C13, C14, C17, C18, C19, C20, C37, C38, C43, C44, C45, C46, C51 a C52. |
| | |

c) Hygiena, zdravie a životné prostredie (BWR 3)

| základné charakteristiky | vlastnosti výrobku |
|---|---|
| Obsah, emisie a/alebo uvoľňovanie nebezpečných látok | Nehodnotí sa žiadna výkonnosť |

d) Ochrana proti hluku (BWR 5)

| základné charakteristiky | vlastnosti výrobku |
|---|---|
| | |

e) Úspora energie a zadržiavanie tepla (BWR 6)

| základné charakteristiky | vlastnosti výrobku |
|---|---|
| | |
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| | |

f) Udržateľné využívanie prírodných zdrojov (BWR 7)

| základné charakteristiky | vlastnosti výrobku |
|---|---|
| | |

Uvedené parametre výrobku sú v zhode so súborom deklarovaných parametrov. Toto vyhlásenie o parametroch sa v súlade s nariadením (EÚ) č. 305/2011 vydáva na výhradnú zodpovednosť uvedeného výrobcu.

Podpísal(-a) za a v mene výrobcu:

**Dr. Jens Weber**
(meno)

**Bad Laasphe, 28.01.2025**
(miesto a dátum na výstava)

(podpis)

# IZJAVA O LASTNOSTIH

Št. **4 - 021 - 160089 - 2024/01**

1.) Enotna identifikacijska oznaka tipa proizvoda:

**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry (033)**

2.) Predvidena uporaba:

**Kovinska injekcijska sidra za uporabo v zidovih**

3.) Proizvajalec:

**EJOT SE & Co. KG, Market Unit Construction, In der Stockwiese 35, 57334 Bad Laasphe - Germany**

4.) Sistemi ocenjevanja in preverjanja nespremenljivosti lastnosti:

**Sistem 1**

5.)

| | |
|---|---|
| Evropski ocenjevalni dokument: | **EAD 330076-01-0604** |
| Evropska tehnična ocena: | **ETA-16/0089** |
| Organ za tehnično ocenjevanje: | **DIBt - Deutsches Institut für Bautechnik, Berlin** |
| Priglašeni organi: | **2873 - IFSW - Technische Universität Darmstadt** |

6.) Navedene lastnosti:

a) Mehanska odpornost in stabilnost (BWR 1) ter varnost in dostopnost (BWR 4)

| Glavne značilnosti | Zmogljivost proizvoda |
|---|---|
| Karakteristična odpornost pri statičnih in kvazistatičnih obremenitvah | Glej priloge B 5, B 6, C 1 do C 56 |
| Značilna odpornost in premiki za seizmične obremenitev | Uspešnost ni bila ocenjena |
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# IZJAVA O LASTNOSTIH

Št. **4 - 021 - 160089 - 2024/01**

EJOT®

b) Varnost v primeru požara (BWR 2)

| Glavne značilnosti | Zmogljivost proizvoda |
|---|---|
| Odziv na ogenj | Razred A1 |
| Odpornost proti požaru pri natezni in strižni obremenitvi z in brez ročice. Najmanjše razdalje in razmiki med robovi | Glej priloge C2, C7, C8, C13, C14, C17, C18, C19, C20, C37, C38, C43, C44, C45, C46, C51 in C52. |
| | |

c) Higiena, zdravje in okolje (BWR 3) \ t

| Glavne značilnosti | Zmogljivost proizvoda |
|---|---|
| Vsebnost, emisije in/ali sproščanje nevarnih snovi | Uspešnost ni bila ocenjena |

d) Zaščita pred hrupom (BWR 5) \ t

| Glavne značilnosti | Zmogljivost proizvoda |
|---|---|
| | |

e) Varčevanje z energijo in ohranjanje toplote (BWR 6) \ t

| Glavne značilnosti | Zmogljivost proizvoda |
|---|---|
| | |
| | |
| | |

f) Trajnostna raba naravnih virov (BWR 7) \ t

| Glavne značilnosti | Zmogljivost proizvoda |
|---|---|
| | |

Lastnosti proizvoda, navedenega zgoraj, so v skladu z navedenimi lastnostmi. Za izdajo te izjave o lastnostih je v skladu z Uredbo (EU) št. 305/2011 odgovoren izključno proizvajalec, naveden zgoraj.

Podpisal za in v imenu proizvajalca:

**Dr. Jens Weber**
(Ime)

**Bad Laasphe, 28.01.2025**
(Kraj in datum izstavitve)

(Podpis)

**Table B2: Installation parameters in autoaerted AAC and solid masonry (without sleeve) for prepositioned or push through installation**

| **Anchor size** | | | | **M8** | **M10** | **IG-M6** | **M12** | **IG-M8** | **M16** | **IG-M10** |
|---|---|---|---|---|---|---|---|---|---|---|
| Nominal drill hole diameter | | $d_0$ | [mm] | 10 | 12 | | 14 | | 18 | |
| Drill hole depth | | $h_0$ | [mm] | $h_{ef} + t_{fix}$ [1)] | | | | | | |
| Effective anchorage depth | | $h_{ef}$ | [mm] | 80 | ≥ 90 | | ≥ 100 | | ≥ 100 | |
| Diameter of clearance hole in the fixture | Prepositioned installation | $d_f \leq$ | [mm] | 9 | 12 | 7 | 14 | 9 | 18 | 12 |
| | Push through installation | $d_f \leq$ | [mm] | 12 | 14 | 14 | 16 | 16 | 20 | 20 |
| Maximum installation torque | | $T_{inst}$ | [Nm] | See Annexes C 4 – C 56 | | | | | | |
| Minimum thickness of member | | $h_{min}$ | [mm] | $h_{ef}$ + 30 | | | | | | |
| Minimum spacing | | $s_{min}$ | [mm] | See Annexes C 4 – C 56 | | | | | | |
| Minimum edge distance | | $c_{min}$ | [mm] | | | | | | | |

1) Consider $t_{fix}$ in case of push through installation.

**Table B3: Installation parameters in solid and hollow brick (with perforated sleeve) for prepositioned installation**

| **Anchor size** | | | **M8** | **M8 / M10 / IG-M6** | | | **M12 / M16 / IG-M8 / IG-M10** | | |
|---|---|---|---|---|---|---|---|---|---|
| **Perforated sleeve SH** | | | **12x80** | **16x85** | **16x130** | **16x130/330** | **20x85** | **20x130** | **20x200** |
| Nominal drill hole diameter | $d_0$ | [mm] | 12 | 16 | 16 | 16 | 20 | 20 | 20 |
| Drill hole depth | $h_0$ | [mm] | 85 | 90 | 135 | 330 | 90 | 135 | 205 |
| Effective anchorage depth | $h_{ef}$ | [mm] | 80 | 85 | 130 | 130 | 85 | 130 | 200 |
| Diameter of clearance hole in the fixture | $d_f \leq$ | [mm] | 9 | 7 (IG-M6) / 9 (M8) / 12 (M10) | | | 9 (IG-M8) / 12 (IG-M10) / 14 (M12) / 18 (M16) | | |
| Maximum installation torque | $T_{inst}$ | [Nm] | See Annexes C 4 – C 56 | | | | | | |
| Minimum thickness of member | $h_{min}$ | [mm] | 115 | 115 | 195 | 195 | 115 | 195 | 240 |
| Minimum spacing | $s_{min}$ | [mm] | See Annexes C 4 – C 56 | | | | | | |
| Minimum edge distance | $c_{min}$ | [mm] | | | | | | | |

| | |
|---|---|
| **Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry** | **Annex B 5** |
| **Intended use**<br>Installation parameters | |

**Table B4: Installation parameters in solid and hollow bricks (with perforated sleeve) for prepositioned installation through non-load-bearing layers and/or push-through installation**

| **Anchor size** | | | | **M8 / M10 / IG-M6** | | **M12 / M16 / IG-M8 / IG-M10** | |
|---|---|---|---|---|---|---|---|
| | | **Perforated sleeve SH** | | **16x130** | **16x130/330** | **20x130** | **20x200** |
| Nominal drill hole diameter | | $d_0$ | [mm] | 16 | 16 | 20 | 20 |
| Drill hole depth | | $h_0$ | [mm] | $h_{ef}$ + 5mm + $t_{nll}$ + $t_{fix}$ [1)] | | | |
| Effective embedment depth | Prepositioned installation | $h_{ef}$ | [mm] | 130 | 130 | 130 | 200 |
| | Push through installation | $h_{ef}$ | [mm] | 85 | 130 | 85 | 85 |
| Maximum thickness of non-loadbearing layer | | max $t_{nll}$ | [mm] | 45 | 200 | 45 | 115 |
| Diameter of clearance hole in the fixture | Prepositioned installation | $d_f \leq$ | [mm] | 7 (IG-M6) / 9 (M8) / 12 (M10) | | 9 (IG-M8) / 12 (IG-M10) / 14 (M12) / 18 (M16) | |
| | Push through installation | $d_f \leq$ | [mm] | 18 | | 22 | |
| Maximum installation torque | | $T_{inst}$ | [Nm] | See Annexes C 4 – C 56 | | | |
| Minimum thickness of member | | $h_{min}$ | [mm] | 195 (115) | 195 | 195 (115) | 240 (115) |
| Minimum spacing | | $s_{min}$ | [mm] | See Annexes C 4 – C 56 | | | |
| Minimum edge distance | | $c_{min}$ | [mm] | | | | |

[1)] Consider $t_{nll}$ and/or $t_{fix}$ in case of non-loadbearing layers and/or push through installation.

| **Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry** | **Annex B 6** |
|---|---|
| **Intended use**<br>Installation parameters | |

**Table C1: β-factor for job-site testing under tension loading**

| Base material | anchor size | Perforated sleeve SH | Anchorage depth | β-Factor | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | $T_a$: 40°C / 24°C | | $T_b$: 80°C / 50°C | | $T_c$: 120°C / 72°C | |
| | | | $h_{ef}$ | d/d | w/d w/w | d/d | w/d w/w | d/d | w/d w/w |
| Autoclaved aerated concrete | all sizes | with and without SH | all | 0,95 | 0,86 | 0,81 | 0,73 | 0,81 | 0,73 |
| Calcium silica bricks | $d_0 \leq 14$ mm | with SH | all | 0,93 | 0,80 | 0,87 | 0,74 | 0,65 | 0,56 |
| | $d_0 \geq 16$ mm | | | 0,93 | 0,93 | 0,87 | 0,87 | 0,65 | 0,65 |
| | $d_0 \leq 14$ mm | without SH | ≤ 100 mm | 0,93 | 0,80 | 0,87 | 0,74 | 0,65 | 0,56 |
| | $d_0 \geq 16$ mm | | | 0,93 | 0,93 | 0,87 | 0,87 | 0,65 | 0,65 |
| | all sizes | without SH | > 100 mm | 0,93 | 0,56 | 0,87 | 0,52 | 0,65 | 0,40 |
| Clay Bricks | all sizes | with SH | all | 0,86 | 0,86 | 0,86 | 0,86 | 0,73 | 0,73 |
| | | without SH | ≤ 100 mm | 0,93 | 0,80 | 0,87 | 0,74 | 0,65 | 0,56 |
| | | without SH | > 100 mm | 0,86 | 0,43 | 0,86 | 0,43 | 0,73 | 0,37 |
| Concrete bricks | $d_0 \leq 12$ mm | with and without SH | all | 0,93 | 0,80 | 0,87 | 0,74 | 0,65 | 0,56 |
| | $d_0 \geq 16$ mm | | | 0,93 | 0,93 | 0,87 | 0,87 | 0,65 | 0,65 |

**Table C2: Characteristic steel resistance**

| Anchor size | | | | M8 | M10 | M12 | M16 | IG-M6 | IG-M8 | IG-M10 |
|---|---|---|---|---|---|---|---|---|---|---|
| Cross section area | | $A_s$ | [mm²] | 36,6 | 58 | 84,3 | 157 | - | - | - |
| **Characteristic tension resistance, Steel failure** [1] | | | | | | | | | | |
| Steel, Property class | 4.6 and 4.8 | $N_{Rk,s}$ | [kN] | 15 (13) | 23 (21) | 34 | 63 | -[3] | -[3] | -[3] |
| | 5.6 and 5.8 | $N_{Rk,s}$ | [kN] | 18 (17) | 29 (27) | 42 | 78 | 10 | 17 | 29 |
| | 8.8 | $N_{Rk,s}$ | [kN] | 29 (27) | 46 (43) | 67 | 125 | 16 | 27 | 46 |
| Stainless steel A2, A4 and HCR, class (A2 only class 50 and 70) | 50 | $N_{Rk,s}$ | [kN] | 18 | 29 | 42 | 79 | -[3] | -[3] | -[3] |
| | 70 | $N_{Rk,s}$ | [kN] | 26 | 41 | 59 | 110 | 14 | 26 | 41 |
| | 80 | $N_{Rk,s}$ | [kN] | 29 | 46 | 67 | 126 | -[3] | -[3] | -[3] |
| **Characteristic tension resistance, Partial factor** [2] | | | | | | | | | | |
| Steel, Property class | 4.6 and 5.6 | $\gamma_{Ms,N}$ | [-] | 2,0 | | | | -[3] | | |
| | 4.8, 5.8 and 8.8 | $\gamma_{Ms,N}$ | [-] | 1,5 | | | | | | |
| Stainless steel A2, A4 and HCR, class (A2 only class 50 and 70) | 50 | $\gamma_{Ms,N}$ | [-] | 2,86 | | | | -[3] | | |
| | 70 | $\gamma_{Ms,N}$ | [-] | 1,87 | | | | | | |
| | 80 | $\gamma_{Ms,N}$ | [-] | 1,6 | | | | -[3] | | |
| **Characteristic shear resistance, Steel failure without lever arm** [1] | | | | | | | | | | |
| Steel, Property class | 4.6 and 4.8 | $V^0_{Rk,s}$ | [kN] | 7 (6) | 12 (10) | 17 | 31 | -[3] | -[3] | -[3] |
| | 5.6 and 5.8 | $V^0_{Rk,s}$ | [kN] | 9 (8) | 15 (13) | 21 | 39 | 5 | 9 | 15 |
| | 8.8 | $V^0_{Rk,s}$ | [kN] | 15 (13) | 23 (21) | 34 | 63 | 8 | 14 | 23 |
| Stainless steel A2, A4 and HCR, class (A2 only class 50 and 70) | 50 | $V^0_{Rk,s}$ | [kN] | 9 | 15 | 21 | 39 | -[3] | -[3] | -[3] |
| | 70 | $V^0_{Rk,s}$ | [kN] | 13 | 20 | 30 | 55 | 7 | 13 | 20 |
| | 80 | $V^0_{Rk,s}$ | [kN] | 15 | 23 | 34 | 63 | -[3] | -[3] | -[3] |

**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry**

**Performances**

β-factors for job site testing under tension load

Characteristic steel resistance under tension and shear load

**Annex C 1**

**Table C2: Characteristic steel resistance (continuation)**

| Anchor size | | | | M8 | M10 | M12 | M16 | IG-M6 | IG-M8 | IG-M10 |
|---|---|---|---|---|---|---|---|---|---|---|
| Cross section area | | $A_s$ | [mm²] | 36,6 | 58 | 84,3 | 157 | - | - | - |
| **Characteristic shear resistance, Steel failure with lever arm** [1] | | | | | | | | | | |
| Steel, Property class | 4.6 and 4.8 | $M^0_{Rk,s}$ | [Nm] | 15 (13) | 30 (27) | 52 | 133 | -[3] | -[3] | -[3] |
| | 5.6 and 5.8 | $M^0_{Rk,s}$ | [Nm] | 19 (16) | 37 (33) | 65 | 166 | 8 | 19 | 37 |
| | 8.8 | $M^0_{Rk,s}$ | [Nm] | 30 (26) | 60 (53) | 105 | 266 | 12 | 30 | 60 |
| Stainless steel A2, A4 and HCR, class (A2 only class 50 and 70) | 50 | $M^0_{Rk,s}$ | [Nm] | 19 | 37 | 66 | 167 | -[3] | -[3] | -[3] |
| | 70 | $M^0_{Rk,s}$ | [Nm] | 26 | 52 | 92 | 232 | 11 | 26 | 52 |
| | 80 | $M^0_{Rk,s}$ | [Nm] | 30 | 59 | 105 | 266 | -[3] | -[3] | -[3] |
| **Characteristic shear resistance, Partial factor** [2] | | | | | | | | | | |
| Steel, Property class | 4.6 and 5.6 | $\gamma_{Ms,V}$ | [-] | 1,67 | | | | -[3] | | |
| | 4.8, 5.8 and 8.8 | $\gamma_{Ms,V}$ | [-] | 1,25 | | | | | | |
| Stainless steel A2, A4 and HCR, class (A2 only class 50 and 70) | 50 | $\gamma_{Ms,V}$ | [-] | 2,38 | | | | -[3] | | |
| | 70 | $\gamma_{Ms,V}$ | [-] | 1,56 | | | | | | |
| | 80 | $\gamma_{Ms,V}$ | [-] | 1,33 | | | | -[3] | | |

1) Values are only valid for the given stress area $A_s$. Values in brackets are valid for undersized threaded rods with smaller stress area $A_s$ for hot-dip galvanised threaded rods according to EN ISO 10684:2004+AC:2009.
2) in absence of national regulation
3) Fastener type not part of the ETA

**Table C3: Characteristic steel resistance under fire exposure** [1]

| Anchor size | | | | M8 | M10 | M12 | M16 | IG-M6 | IG-M8 | IG-M10 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Characteristic tension resistance, Steel failure** | | | | | | | | | | |
| Steel, Property class 5.8, and higher; Stainless steel A2, A4 and HCR, class 50 and higher | R30 | $N_{Rk,s,fi}$ | [kN] | 1,1 | 1,7 | 3,0 | 5,7 | 0,3 | 1,1 | 1,7 |
| | R60 | $N_{Rk,s,fi}$ | [kN] | 0,9 | 1,4 | 2,3 | 4,2 | 0,2 | 0,9 | 1,4 |
| | R90 | $N_{Rk,s,fi}$ | [kN] | 0,7 | 1,0 | 1,6 | 3,0 | 0,2 | 0,7 | 1,0 |
| | R120 | $N_{Rk,s,fi}$ | [kN] | 0,5 | 0,8 | 1,2 | 2,2 | 0,1 | 0,5 | 0,8 |
| **Characteristic shear resistance, Steel failure without lever arm** | | | | | | | | | | |
| Steel, Property class 5.8, and higher; Stainless steel A2, A4 and HCR, class 50 and higher | R30 | $V_{Rk,s,fi}$ | [kN] | 1,1 | 1,7 | 3,0 | 5,7 | 0,3 | 1,1 | 1,7 |
| | R60 | $V_{Rk,s,fi}$ | [kN] | 0,9 | 1,4 | 2,3 | 4,2 | 0,2 | 0,9 | 1,4 |
| | R90 | $V_{Rk,s,fi}$ | [kN] | 0,7 | 1,0 | 1,6 | 3,0 | 0,2 | 0,7 | 1,0 |
| | R120 | $V_{Rk,s,fi}$ | [kN] | 0,5 | 0,8 | 1,2 | 2,2 | 0,1 | 0,5 | 0,8 |
| **Characteristic shear resistance, Steel failure with lever arm** | | | | | | | | | | |
| Steel, Property class 5.8, and higher; Stainless steel A2, A4 and HCR, class 50 and higher | R30 | $M_{Rk,s,fi}$ | [Nm] | 1,1 | 2,2 | 4,7 | 12,0 | 0,2 | 1,1 | 2,2 |
| | R60 | $M_{Rk,s,fi}$ | [Nm] | 0,9 | 1,8 | 3,5 | 9,0 | 0,2 | 0,9 | 1,8 |
| | R90 | $M_{Rk,s,fi}$ | [Nm] | 0,7 | 1,3 | 2,5 | 6,3 | 0,1 | 0,7 | 1,3 |
| | R120 | $M_{Rk,s,fi}$ | [Nm] | 0,5 | 1,0 | 1,8 | 4,7 | 0,1 | 0,5 | 1,0 |

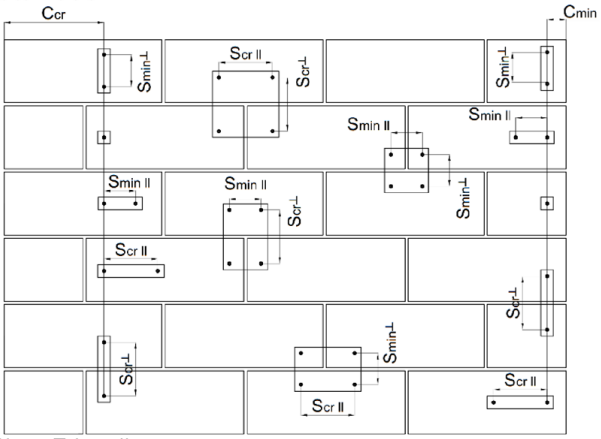
1) partial factor in case of fire is 1,0 for all steel types and load directions.

**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry**

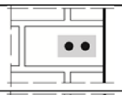
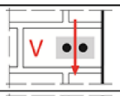
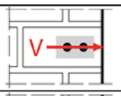
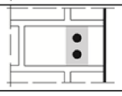
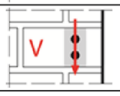
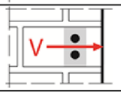
**Performances**
Characteristic steel resistance under tension and shear load – under fire exposure

**Annex C 2**

## Spacing and edge distances




$c_{cr}$ = Char. Edge distance
$c_{min}$ = Minimum Edge distance
$s_{cr,II}$ ; ($s_{min,II}$) = Characteristic (minimum) spacing for anchors placed parallel to horizontal joint
$s_{cr,\perp}$ ; ($s_{min,\perp}$) = Characteristic (minimum) spacing for anchors placed perpendicular to horizontal joint

| Anchor position \ Load direction | Tension load | | Shear load parallel to free edge $V_{II}$ | | Shear load perpendicular to free edge $V_{\perp}$ | |
|---|---|---|---|---|---|---|
| Anchors parallel to horizontal joint $s_{cr,II}$ ; ($s_{min,II}$) |  | $\alpha_{g\,II,N}$ |  | $\alpha_{g\,II,V\,II}$ |  | $\alpha_{g\,II,V\,\perp}$ |
| Anchors vertical to horizontal joint $s_{cr,\perp}$ ; ($s_{min,\perp}$ ) |  | $\alpha_{g\,\perp,N}$ |  | $\alpha_{g\,\perp,V\,II}$ |  | $\alpha_{g\,\perp,V\,\perp}$ |

$\alpha_{edge,N}$ = Reduction factor for tension loads at the free edge for $c_{min} \le c < c_{cr}$ (single anchor)
$\alpha_{edge,V\,\perp}$ = Reduction factor for shear loads perpendicular to the free edge for $c_{min} \le c < c_{cr}$ (single anchor)
$\alpha_{edge,V\,II}$ = Reduction factor for shear loads parallel to the free edge for $c_{min} \le c < c_{cr}$ (single anchor)
$\alpha_{g\,II,N}$ = Group factor for anchors parallel to horizontal joint under tension load
$\alpha_{g\,\perp,N}$ = Group factor for anchors perpendicular to horizontal joint under tension load
$\alpha_{g\,II,V\,II}$ = Group factor for anchors parallel to horizontal joint under shear load parallel to the free edge
$\alpha_{g\,\perp,V\,II}$ = Group factor for anchors perpendicular to horizontal joint under shear load parallel to the free edge
$\alpha_{g\,II,V\,\perp}$ = Group factor for anchors parallel to horizontal joint under shear load perpendicular to the free edge
$\alpha_{g\,\perp,V\,\perp}$ = Group factor for anchors perpendicular to hor. joint under shear load perpendicular to the free edge

Single anchor at the edge:
$N_{Rk,b,c} = \alpha_{edge,N} * N_{RK,b}$ resp. $N_{Rk,p,c} = \alpha_{edge,N} * N_{RK,p}$
$V_{Rk,c\,II} = \alpha_{edge,V\,II} * V_{Rk,b}$
$V_{Rk,c\,\perp} = \alpha_{edge,V\,\perp} * V_{Rk,b}$

Group of 2 anchors:
$N^{g}_{Rk} = \alpha_{g,N} * N_{RK,b}$
$V^{g}_{Rk\,II} = \alpha_{g,V\,II} * V_{Rk,b}$ resp. $V^{g}_{Rk\,\perp} = \alpha_{g,V\,\perp} * V_{Rk,b}$ (for $c \ge c_{cr}$)
$V^{g}_{Rk,c\,II} = \alpha_{g,V\,II} * V_{Rk,b}$ resp. $V^{g}_{Rk,c\,\perp} = \alpha_{g,V\,\perp} * V_{Rk,b}$ (for $c \ge c_{min}$)

Group of 4 anchors:
$N^{g}_{Rk} = \alpha_{g\,II,N} * \alpha_{g\,\perp,N} * N_{RK,b}$
$V^{g}_{Rk\,II} = \alpha_{g\,II,V\,II} * \alpha_{g\,\perp,V\,II} * V_{Rk,b}$ resp. $V^{g}_{Rk\,\perp} = \alpha_{g\,II,V\,\perp} * \alpha_{g\,\perp,V\,\perp} * V_{Rk,b}$ (for $c \ge c_{cr}$)
$V^{g}_{Rk,c\,II} = \alpha_{g\,II,V\,II} * \alpha_{g\,\perp,V\,II} * V_{Rk,b}$ resp. $V^{g}_{Rk,c\,\perp} = \alpha_{g\,II,V\,\perp} * \alpha_{g\,\perp,V\,\perp} * V_{Rk,b}$ (for $c \ge c_{min}$)

Equations depend on anchor position and load direction (see table above). Reduction factor, group factor and resistances see annex C 4 – C 56. Reduction for installation in joints see annex B 1.

**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry**

**Performances**
Definition of the reduction- and group factors

**Annex C 3**

## Brick type: Autoclaved aerated concrete – AAC

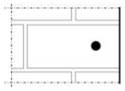
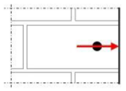
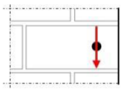
### Table C4: Stone description

| | | |
|---|---|---|
| Brick type | | Autoclaved aerated concrete AAC |
| Density | ρ [kg/dm³] | 0,35 – 0,6 |
| Normalised mean compressive strenght | $f_b$ [N/mm²] | ≥ 2, ≥ 4 or ≥ 6 |
| Code | | EN 771-4:2011+A1:2015 |
| Producer (Country) | | e.g. Porit (DE) |
| Brick dimensions | [mm] | ≥ 499 x 240 x 249 |
| Drilling method | | Rotary drilling |

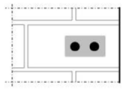
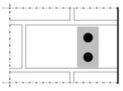
### Table C5: Installation parameter

| Anchor size | | [-] | M8 | M10 | M12 | M16 | IG-M6 | IG-M8 | IG-M10 |
|---|---|---|---|---|---|---|---|---|---|
| Installation torque | $T_{inst}$ | [Nm] | ≤ 5 | ≤ 5 | ≤ 10 | ≤ 10 | ≤ 5 | ≤ 5 | ≤ 10 |
| Char. Edge distance | $c_{cr}$ | [mm] | 150 (for shear loads perpendicular to the free edge: $c_{cr}$ = 210) | | | | | | |
| Minimum Edge Distance | $c_{min}$ | [mm] | 50 | | | | | | |
| Characteristic Spacing | $s_{cr,\,II}$ | [mm] | 300 | | | | | | |
| | $s_{cr,\,\perp}$ | [mm] | 250 | | | | | | |
| Minimum Spacing | $s_{min,\,II}$; $s_{min,\,\perp}$ | [mm] | 50 | | | | | | |

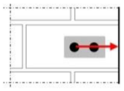
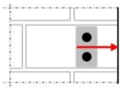
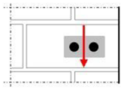
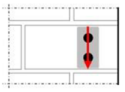
### Table C6: Reduction factors for single anchors at the edge

| Tension load | | | Shear load | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Perpendicular to the free edge | | | Parallel to the free edge | | |
| | with c ≥ | $\alpha_{edge,\,N}$ | | with c ≥ | $\alpha_{edge,\,V\perp}$ | | with c ≥ | $\alpha_{edge,\,V\,II}$ |
|  | 50 | 0,85 |  | 50 | 0,12 |  | 50 | 0,70 |
| | | | | 125 | 0,50 | | 125 | 0,85 |
| | 150 | 1,00 | | 210 | 1,00 | | 150 | 1,00 |

### Table C7: Factors for anchor groups under tension load

| Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|
| | with c ≥ | with s ≥ | $\alpha_{g\,II,\,N}$ | | with c ≥ | with s ≥ | $\alpha_{g\,\perp,\,N}$ |
|  | 50 | 50 | 1,10 |  | 50 | 50 | 0,75 |
| | 150 | 50 | 1,25 | | 150 | 50 | 0,90 |
| | 150 | 300 | 2,00 | | 150 | 250 | 2,00 |

### Table C8: Factors for anchor groups under shear load

| | Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|---|
| Shear load perpendicular to the free edge |  | with c ≥ | with s ≥ | $\alpha_{g\,II,V\perp}$ |  | with c ≥ | with s ≥ | $\alpha_{g\,\perp,V\perp}$ |
| | | 50 | 50 | 0,20 | | 50 | 50 | 0,25 |
| | | 210 | 50 | 1,60 | | 210 | 50 | 1,80 |
| | | 210 | 300 | 2,00 | | 210 | 250 | 2,00 |
| Shear load parallel to the free edge |  | with c ≥ | with s ≥ | $\alpha_{g\,II,V\,II}$ |  | with c ≥ | with s ≥ | $\alpha_{g\,\perp,V\,II}$ |
| | | 50 | 50 | 1,15 | | 50 | 50 | 0,80 |
| | | 150 | 50 | 1,60 | | 150 | 50 | 1,10 |
| | | 150 | 300 | 2,00 | | 150 | 250 | 2,00 |

**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry**

**Performances Autoclaved Aerated Concrete - AAC**
Description of the stone, Installation parameters, Reduction- and Group factors

**Annex C 4**

## Brick type: Autoclaved aerated concrete – AAC

**Table C9: Characteristic values of tension and shear load resistances**

| Anchor size | Perforated sleeve | Effecitve Anchorage depth | Characteristic Resistances with $c \geq c_{cr}$ and $s \geq s_{cr}$ | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Use condition | | | | | | |
| | | | d/d | | | w/d w/w | | | d/d w/d w/w |
| | | | 40°C/24°C | 80°C/50°C | 120°C/72°C | 40°C/24°C | 80°C/50°C | 120°C/72°C | All temperature ranges |
| | $d_s$ | $h_{ef}$ | $N_{Rk,b} = N_{Rk,p}$ [1] | | | $N_{Rk,b} = N_{Rk,p}$ [1] | | | $V_{Rk,b}$ [1] |
| | [mm] | [mm] | [kN] | | | | | | |
| **Normalised mean compressive strenght $f_b \geq 2$ N/mm²; Density $\rho \geq 0{,}35$ kg/dm³** | | | | | | | | | |
| M8 | - | 80 | 1,2 | 0,9 | 0,9 | 0,9 | 0,9 | 0,9 | 1,5 |
| M10 / IG-M6 | - | 90 | 1,2 | 0,9 | 0,9 | 0,9 | 0,9 | 0,9 | 2,5 |
| M12 / M16 / IG-M8 / IG-M10 | - | 100 | 2,0 | 1,5 | 1,5 | 1,5 | 1,5 | 1,5 | 2,5 |
| M8 | SH 12 | 80 | 1,2 | 0,9 | 0,9 | 0,9 | 0,9 | 0,9 | 1,5 |
| M8 / M10/ IG-M6 | SH 16 | ≥ 85 | 1,2 | 0,9 | 0,9 | 0,9 | 0,9 | 0,9 | 2,5 |
| M12 / M16 / IG-M8 / IG-M10 | SH 20 | ≥ 85 | 2,0 | 1,5 | 1,5 | 1,5 | 1,5 | 1,5 | 2,5 |

1) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\,II} = V_{Rk,c\perp}$ according to Annex C 3

| Anchor size | Perforated sleeve | Effecitve Anchorage depth | Characteristic Resistances with $c \geq c_{cr}$ and $s \geq s_{cr}$ | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Use condition | | | | | | |
| | | | d/d | | | w/d w/w | | | d/d w/d w/w |
| | | | 40°C/24°C | 80°C/50°C | 120°C/72°C | 40°C/24°C | 80°C/50°C | 120°C/72°C | All temperature ranges |
| | $d_s$ | $h_{ef}$ | $N_{Rk,b} = N_{Rk,p}$ [1] | | | $N_{Rk,b} = N_{Rk,p}$ [1] | | | $V_{Rk,b}$ [1] |
| | [mm] | [mm] | [kN] | | | | | | |
| **Normalised mean compressive strenght $f_b \geq 4$ N/mm²; Density $\rho \geq 0{,}50$ kg/dm³** | | | | | | | | | |
| M8 | - | 80 | 3,0 | 2,5 | 2,0 | 2,5 | 2,0 | 2,0 | 4,5 |
| M10 / IG-M6 | - | 90 | 3,0 | 2,5 | 2,0 | 2,5 | 2,0 | 2,0 | 7,5 |
| M12 / M16 / IG-M8 / IG-M10 | - | 100 | 5,0 | 4,5 | 4,0 | 4,5 | 4,0 | 4,0 | 7,5 |
| M8 | SH 12 | 80 | 3,0 | 2,5 | 2,0 | 2,5 | 2,0 | 2,0 | 4,5 |
| M8 / M10/ IG-M6 | SH 16 | ≥ 85 | 3,0 | 2,5 | 2,0 | 2,5 | 2,0 | 2,0 | 7,5 |
| M12 / M16 / IG-M8 / IG-M10 | SH 20 | ≥ 85 | 5,0 | 4,5 | 4,0 | 4,5 | 4,0 | 4,0 | 7,5 |

1) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\,II} = V_{Rk,c\perp}$ according to Annex C 3

| | |
|---|---|
| **Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry** | **Annex C 5** |
| **Performances autoclaved aerated concrete - AAC**<br>Characteristic Resistances and Displacements | |

## Brick type: Autoclaved aerated concrete – AAC

| Anchor size | Perforated sleeve | Effecitve Anchorage depth | Characteristic Resistances with $c \geq c_{cr}$ and $s \geq s_{cr}$ | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Use condition | | | | | | |
| | | | d/d | | | w/d<br>w/w | | | d/d<br>w/d<br>w/w |
| | | | 40°C/24°C | 80°C/50°C | 120°C/72°C | 40°C/24°C | 80°C/50°C | 120°C/72°C | All temperature ranges |
| | | $h_{ef}$ | $N_{Rk,b} = N_{Rk,p}$ [1] | | | $N_{Rk,b} = N_{Rk,p}$ [1] | | | $V_{Rk,b}$ [1] |
| | | [mm] | [kN] | | | | | | |
| **Normalised mean compressive strenght $f_b \geq 6$ N/mm²; Density $\rho \geq 0{,}60$ kg/dm³** | | | | | | | | | |
| M8 | - | 80 | 4,0 | 3,5 | 3,0 | 3,5 | 3,0 | 3,0 | 6,0 |
| M10 / IG-M6 | - | 90 | 4,0 | 3,5 | 3,0 | 3,5 | 3,0 | 3,0 | 10,0 |
| M12 / M16 / IG-M8 / IG-M10 | - | 100 | 7,0 | 6,0 | 5,5 | 6,5 | 5,5 | 5,5 | 10,0 |
| M8 | SH 12 | 80 | 4,0 | 3,5 | 3,0 | 3,5 | 3,0 | 3,0 | 6,0 |
| M8 / M10/ IG-M6 | SH 16 | ≥ 85 | 4,0 | 3,5 | 3,0 | 3,5 | 3,0 | 3,0 | 10,0 |
| M12 / M16 / IG-M8 / IG-M10 | SH 20 | ≥ 85 | 7,0 | 6,0 | 5,5 | 6,5 | 5,5 | 5,5 | 10,0 |

[1] $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\,II} = V_{Rk,c\perp}$ according to Annex C 3

### Table C10: Displacements

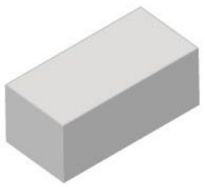
| Anchor size | $h_{ef}$ | $\delta_N$ / N | $\delta_{N0}$ | $\delta_{N\infty}$ | $\delta_V$ / V | $\delta_{V0}$ | $\delta_{V\infty}$ |
|---|---|---|---|---|---|---|---|
| | [mm] | [mm/kN] | [mm] | [mm] | [mm/kN] | [mm] | [mm] |
| M8 – M12 / IG-M6 – M10 | all | 0,1 | $0{,}1*N_{Rk} / 2{,}8$ | $2*\delta_{N0}$ | 0,3 | $0{,}3*V_{Rk} / 2{,}8$ | $1{,}5*\delta_{V0}$ |
| M16 | all | | | | 0,1 | $0{,}1*V_{Rk} / 2{,}8$ | $1{,}5*\delta_{V0}$ |

| | |
|---|---|
| **Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry** | **Annex C 6** |
| **Performances autoclaved aerated concrete – AAC**<br>Characteristic Resistances and Displacements | |

## Brick type: Solid calcium silica brick KS-NF

### Table C11: Stone description

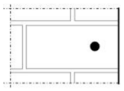
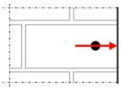
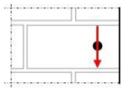
| | | |
|---|---|---|
| Brick type | | Solid calcium silica brick KS-NF |
| Density | $\rho$ [kg/dm³] | ≥ 2,0 |
| Normalised mean compressive strenght | $f_b$ [N/mm²] | ≥ 28 |
| Conversion factor for lower compressive strengths | | $(f_b / 28)^{0,5} \leq 1,0$ |
| Code | | EN 771-2:2011+A1:2015 |
| Producer (Country) | | e.g. Wemding (DE) |
| Brick dimensions | [mm] | ≥ 240 x 115 x 71 |
| Drilling method | | Hammer drilling |



### Table C12: Installation parameter

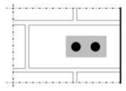
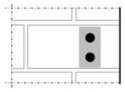
| Anchor size | | [-] | M8 | M10 | M12 | M16 | IG-M6 | IG-M8 | IG-M10 |
|---|---|---|---|---|---|---|---|---|---|
| Installation torque | $T_{inst}$ | [Nm] | ≤ 10 | ≤ 10 | ≤ 15 | ≤ 15 | ≤ 10 | ≤ 10 | ≤ 10 |
| Char. Edge distance (under fire conditions) | $c_{cr}$; ($c_{cr,fi}$) | [mm] | 150 (2 $h_{ef}$) (for shear loads perpendicular to the free edge: $c_{cr}$ = 240) | | | | | | |
| Minimum Edge Distance | $c_{min}$ | [mm] | 60 | | | | | | |
| Characteristic Spacing (under fire conditions) | $s_{cr,\,II}$; ($s_{cr,fi,\,II}$) | [mm] | 240 (4 $h_{ef}$) | | | | | | |
| | $s_{cr,\,\perp}$; ($s_{cr,fi,\,\perp}$) | [mm] | 150 (4 $h_{ef}$) | | | | | | |
| Minimum Spacing | $s_{min,\,II}$; $s_{min,\,\perp}$ | [mm] | 75 | | | | | | |

### Table C13: Reduction factors for single anchors at the edge

| Tension load | | | Shear load perpendicular to free edge | | | Shear load parallel to free edge | | |
|---|---|---|---|---|---|---|---|---|
| | with c ≥ | $\alpha_{edge,\,N}$ | | with c ≥ | $\alpha_{edge,\,V\perp}$ | | with c ≥ | $\alpha_{edge,\,V\,II}$ |
|  | 60[1)] | 0,50 |  | 60 | 0,30 |  | 60 | 0,60 |
| | 100[1)] | 0,50 | | 100 | 0,50 | | 100 | 1,00 |
| | 150[1)] | 1,00 | | 240 | 1,00 | | 150 | 1,00 |
| | 180 | 1,00 | | | | | | |

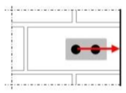
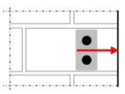
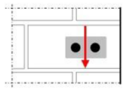
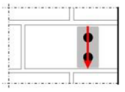
1) All applications, except for hef = 200mm and without sleeve

### Table C14: Factors for anchor groups under tension load

| Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|
| | with c ≥ | with s ≥ | $\alpha_{g\,II,\,N}$ | | with c ≥ | with s ≥ | $\alpha_{g\,\perp,\,N}$ |
|  | 60[1)] | 75 | 0,70 |  | 60[1)] | 75 | 1,15 |
| | 150[1)] | 75 | 1,40 | | 150[1)] | 75 | 2,00 |
| | 150[1)] | 240 | 2,00 | | 150[1)] | 150 | 2,00 |
| | 180[2)] | 75 | 1,00 | | 180[2)] | 75 | 1,15 |
| | 180[2)] | 240 | 1,70 | | 180[2)] | 150 | 2,00 |
| | 240[2)] | 240 | 2,00 | | | | |

1) All applications, except for hef = 200mm and without sleeve
2) Only for application with $h_{ef}$ = 200mm and without sleeve

### Table C15: Factors for anchor groups under shear load

| | Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|---|
| Shear load perpendicular to the free edge |  | with c ≥ | with s ≥ | $\alpha_{g\,II,V\perp}$ |  | with c ≥ | with s ≥ | $\alpha_{g\,\perp,V\perp}$ |
| | | 60 | 75 | 0,75 | | 60 | 75 | 0,90 |
| | | 150 | 75 | 2,00 | | 150 | 75 | 2,00 |
| | | 150 | 240 | 2,00 | | 150 | 150 | 2,00 |
| Shear load parallel to the free edge |  | with c ≥ | with s ≥ | $\alpha_{g\,II,V\,II}$ |  | with c ≥ | with s ≥ | $\alpha_{g\,\perp,V\,II}$ |
| | | 60 | 75 | 2,00 | | 60 | 75 | 2,00 |
| | | 150 | 75 | 2,00 | | 150 | 75 | 2,00 |
| | | 150 | 240 | 2,00 | | 150 | 150 | 2,00 |

**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry**

**Performances solid calcium silica brick KS-NF**
Description of the stone, Installation parameters, Reduction- and Group factors

**Annex C 7**

## Brick type: Solid calcium silica brick KS-NF

### Table C16: Characteristic values of tension and shear load resistances

| Anchor size | Perforated sleeve | Effecitve Anchorage depth | Characteristic Resistances with $c \geq c_{cr}$ and $s \geq s_{cr}$ | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Use condition | | | | | | |
| | | | d/d | | | w/d w/w | | | d/d w/w (w/d) |
| | | | 40°C/24°C | 80°C/50°C | 120°C/72°C | 40°C/24°C | 80°C/50°C | 120°C/72°C | All temperature ranges |
| | | $h_{ef}$ | $N_{Rk,b} = N_{Rk,p}$ 2) | | | $N_{Rk,b} = N_{Rk,p}$ 2) | | | $V_{Rk,b}$ 2) |
| | | [mm] | [kN] | | | | | | |
| **Normalised mean compressive strength $f_b \geq 28$ N/mm² 1)** | | | | | | | | | |
| M8 | - | 80 | 7,0 | 6,5 | 5,0 | 6,0 | 5,5 | 4,0 | 7,0 |
| M10 / IG-M6 | - | ≥ 90 | | | | | | | |
| M12 / IG-M8 | - | ≥ 100 | | | | | | | |
| M16 / IG-M10 | - | ≥ 100 | 7,0 | 6,5 | 5,0 | 7,0 | 6,5 | 5,0 | |
| M10 / M12 / M16 / IG-M6 / IG-M8 / IG-M10 | - | 200 | 9,0 | 8,5 | 6,5 | 5,5 | 5,0 | 4,0 | |
| M8 | SH 12 | 80 | 7,0 | 6,5 | 5,0 | 6,0 | 5,5 | 4,0 | |
| M8 / M10/ IG-M6 | SH 16 | ≥ 85 | 7,0 | 6,5 | 5,0 | 7,0 | 6,5 | 5,0 | |
| M12 / M16 / IG-M8 / IG-M10 | SH 20 | ≥ 85 | | | | | | | |

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C11. For stones with higher strengths, the shown values are valid without conversion.

2) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\,II} = V_{Rk,c\,\perp}$ according to Annex C 3

### Table C17: Displacements

| Anchor size | $h_{ef}$ | $\delta_N$ / N | $\delta_{N0}$ | $\delta_{N\infty}$ | $\delta_V$ / V | $\delta_{V0}$ | $\delta_{V\infty}$ |
|---|---|---|---|---|---|---|---|
| | [mm] | [mm/kN] | [mm] | [mm] | [mm/kN] | [mm] | [mm] |
| M8 – M12 / IG-M6 – M10 | all | 0,1 | $0{,}1*N_{Rk} / 3{,}5$ | $2*\delta_{N0}$ | 0,3 | $0{,}3*V_{Rk} / 3{,}5$ | $1{,}5*\delta_{V0}$ |
| M16 | all | | | | 0,1 | $0{,}1*V_{Rk} / 3{,}5$ | $1{,}5*\delta_{V0}$ |

### Table C18: Characteristic values of tension and shear load resistances under fire exposure

| Anchor size | Perforated sleeve | Effective anchorage depth | Characteristic Resistances $N_{Rk,b,fi} = N_{Rk,p,fi} = V_{Rk,b,fi}$ | | | |
|---|---|---|---|---|---|---|
| | | $h_{ef}$ | R30 | R60 | R90 | R120 |
| | | [mm] | [kN] | | | |
| M8 | - | 80 | 0,48 | 0,41 | 0,34 | 0,30 |
| M10 / IG-M6 | - | ≥ 90 | | | | |
| M12 / IG-M8 | - | ≥ 100 | | | | |
| M16 / IG-M10 | - | ≥ 100 | | | | |
| M8 | SH 12 | 80 | 0,47 | 0,26 | - 1) | - 1) |
| M8 / M10 /IG-M6 | SH 16 | ≥ 85 | | | | |
| M12 / M16 / IG-M8 /IG-M10 | SH 20 | ≥ 85 | | | | |

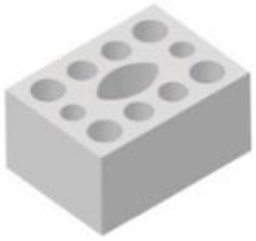
1) no performance assessed

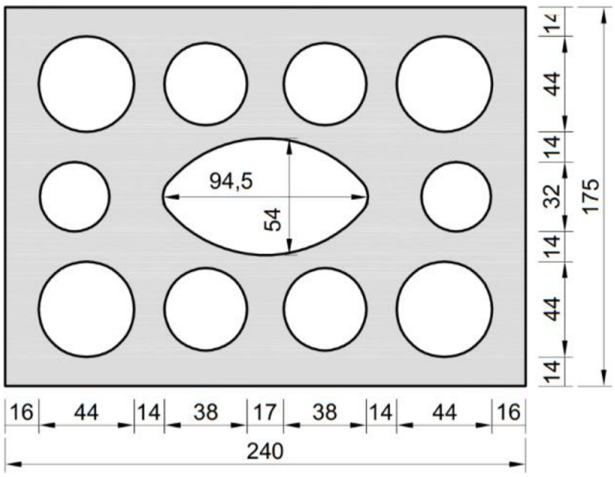
| | |
|---|---|
| **Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry** | **Annex C 8** |
| **Performances solid calcium silica brick KS-NF**<br>Characteristic Resistances and Displacements | |

## Brick type: Hollow Calcium silica brick KSL-3DF

### Table C19: Stone description

| | | |
|---|---|---|
| Brick type | | Hollow calcium silica brick KSL-3DF |
| Density | $\rho$ [kg/dm³] | ≥ 1,4 |
| Normalised mean compressive strenght | $f_b$ [N/mm²] | ≥ 14 |
| Conversion factor for lower compressive strengths | | $(f_b / 14)^{0,75} \leq 1,0$ |
| Code | | EN 771-2:2011+A1:2015 |
| Producer (Country) | | e.g. KS-Wemding (DE) |
| Brick dimensions | [mm] | ≥ 240 x 175 x 113 |
| Drilling method | | Rotary drilling |






### Table C20: Installation parameter

| Anchor size | | [-] | M8 | M10 | M12 | M16 | IG-M6 | IG-M8 | IG-M10 |
|---|---|---|---|---|---|---|---|---|---|
| Installation torque | $T_{inst}$ | [Nm] | ≤ 5 | ≤ 5 | ≤ 8 | ≤ 8 | ≤ 5 | ≤ 8 | ≤ 8 |
| Char. Edge distance | $c_{cr}$ | [mm] | 120 (for shear loads perpendicular to the free edge: $c_{cr}$ = 240) | | | | | | |
| Minimum Edge Distance | $c_{min}$ | [mm] | 60 | | | | | | |
| Characteristic Spacing | $s_{cr,\,II}$ | [mm] | 240 | | | | | | |
| | $s_{cr,\,\perp}$ | [mm] | 120 | | | | | | |
| Minimum Spacing | $s_{min,\,II}$; $s_{min,\,\perp}$ | [mm] | 120 | | | | | | |

### Table C21: Reduction factors for single anchors at the edge

| Tension load | | | Shear load | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Perpendicular to the free edge | | | Parallel to the free edge | | |
| | with c ≥ | $\alpha_{edge,\,N}$ | | with c ≥ | $\alpha_{edge,\,V\perp}$ | | with c ≥ | $\alpha_{edge,\,V\,II}$ |
| | 60 | 1,00 | | 60 | 0,30 | | 60 | 1,00 |
| | 120 | 1,00 | | 240 | 1,00 | | 120 | 1,00 |

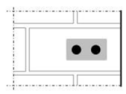
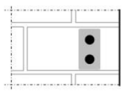
**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry**

**Performances hollow calcium silica brick KSL-3DF**
Description of the stone, Installation parameters, Reductionfactors

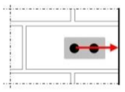
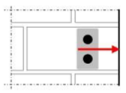
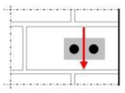
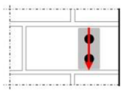
**Annex C 9**

## Brick type: Hollow Calcium silica brick KSL-3DF

### Table C22: Factors for anchor groups under tension load

| Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|
| | with c ≥ | with s ≥ | $\alpha_{g\,II,\,N}$ | | with c ≥ | with s ≥ | $\alpha_{g\,\perp,\,N}$ |
|  | 60 | 120 | 1,50 |  | 60 | 120 | 1,00 |
| | 120 | 120 | 2,00 | | | | |
| | 120 | 240 | 2,00 | | 120 | 120 | 2,00 |

### Table C23: Factors for anchor groups under shear load

| | Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|---|
| Shear load perpendicular to the free edge |  | with c ≥ | with s ≥ | $\alpha_{g\,II,V\,\perp}$ |  | with c ≥ | with s ≥ | $\alpha_{g\,\perp,\,V\,\perp}$ |
| | | 60 | 120 | 0,30 | | 60 | 120 | 0,30 |
| | | 120 | 120 | 1,00 | | | | |
| | | 120 | 240 | 2,00 | | 240 | 120 | 2,00 |
| Shear load parallel to the free edge |  | with c ≥ | with s ≥ | $\alpha_{g\,II,V\,II}$ |  | with c ≥ | with s ≥ | $\alpha_{g\,\perp,V\,II}$ |
| | | 60 | 120 | 1,00 | | 60 | 120 | 1,00 |
| | | 120 | 120 | 1,60 | | | | |
| | | 120 | 240 | 2,00 | | 120 | 120 | 2,00 |

### Table C24: Characteristic values of tension and shear load resistances

| Anchor size | Perforated sleeve | Effective Anchorage depth | Characteristic Resistances with c ≥ $c_{cr}$ and s ≥ $s_{cr}$ | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Use condition | | | | | | |
| | | | d/d | | | w/d w/w | | | d/d w/d w/w |
| | | | 40°C/24°C | 80°C/50°C | 120°C/72°C | 40°C/24°C | 80°C/50°C | 120°C/72°C | All temperature ranges |
| | | $h_{ef}$ | $N_{Rk,b} = N_{Rk,p}$ 2) | | | $N_{Rk,b} = N_{Rk,p}$ 2) | | | $V_{Rk,b}$ 2) |
| | | [mm] | [kN] | | | | | | |
| **Normalised mean compressive strength $f_b \geq 14$ N/mm² 1)** | | | | | | | | | |
| M8 / M10/ IG-M6 | SH 16 | ≥ 85 | 2,5 | 2,5 | 1,5 | 2,5 | 2,5 | 1,5 | 6,0 |
| | | 130 | 2,5 | 2,5 | 2,0 | 2,5 | 2,5 | 2,0 | 6,0 |
| M12 / M16 / IG-M8 / IG-M10 | SH 20 | ≥ 85 | 6,5 | 6,0 | 4,5 | 6,5 | 6,0 | 4,5 | 6,0 |

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C19. For stones with higher strengths, the shown values are valid without conversion.

2) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\,II} = V_{Rk,c\,\perp}$ according to Annex C 3

### Table C25: Displacements

| Anchor size | $h_{ef}$ | $\delta_N$ / N | $\delta_{N0}$ | $\delta_{N\infty}$ | $\delta_V$ / V | $\delta_{V0}$ | $\delta_{V\infty}$ |
|---|---|---|---|---|---|---|---|
| | [mm] | [mm/kN] | [mm] | [mm] | [mm/kN] | [mm] | [mm] |
| M8 – M12 / IG-M6 – M10 | all | 0,13 | 0,13*$N_{Rk}$ / 3,5 | 2*$\delta_{N0}$ | 0,55 | 0,55*$V_{Rk}$ / 3,5 | 1,5*$\delta_{V0}$ |
| M16 | all | | | | 0,31 | 0,31*$V_{Rk}$ / 3,5 | 1,5*$\delta_{V0}$ |

**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry**

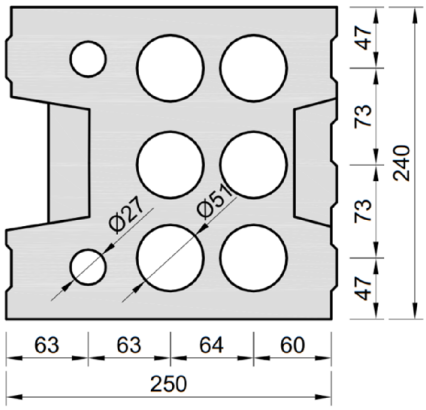
**Performances hollow calcium silica brick KSL-3DF**
Group factors, characteristic Resistances and Displacements

**Annex C 10**

## Brick type: Hollow Calcium silica brick KSL-8DF

### Table C26: Stone description

| | | |
|---|---|---|
| Brick type | | Hollow Calcium silica brick KSL-8DF |
| Density | $\rho$ [kg/dm³] | ≥ 1,4 |
| Normalised mean compressive strenght | $f_b$ [N/mm²] | ≥ 12 |
| Conversion factor for lower compressive strengths | | $(f_b / 12)^{0,75} \leq 1,0$ |
| Code | | EN 771-2:2011+A1:2015 |
| Producer (Country) | | e.g. KS-Wemding (DE) |
| Brick dimensions | [mm] | ≥ 248 x 240 x 238 |
| Drilling method | | Rotary drilling |




### Table C27: Installation parameter

| Anchor size | | [-] | M8 | M10 | M12 | M16 | IG-M6 | IG-M8 | IG-M10 |
|---|---|---|---|---|---|---|---|---|---|
| Installation torque | $T_{inst}$ | [Nm] | ≤ 5 | ≤ 5 | ≤ 8 | ≤ 8 | ≤ 5 | ≤ 8 | ≤ 8 |
| Char. Edge distance | $c_{cr}$ | [mm] | 120 (for shear loads perpendicular to the free edge: $c_{cr}$ = 250) | | | | | | |
| Minimum Edge Distance | $c_{min}$ | [mm] | 50 | | | | | | |
| Characteristic Spacing | $s_{cr, II}$ | [mm] | 250 | | | | | | |
| | $s_{cr, \perp}$ | [mm] | 120 | | | | | | |
| Minimum Spacing | $s_{min, II}$; $s_{min, \perp}$ | [mm] | 50 | | | | | | |

### Table C28: Reduction factors for single anchors at the edge

| Tension load | | | Shear load | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Perpendicular to the free edge | | | Parallel to the free edge | | |
| | with c ≥ | $\alpha_{edge, N}$ | | with c ≥ | $\alpha_{edge, V \perp}$ | | with c ≥ | $\alpha_{edge, V II}$ |
| | 50 | 1,00 | | 50 | 0,30 | | 50 | 1,00 |
| | 120 | 1,00 | | 250 | 1,00 | | 120 | 1,00 |

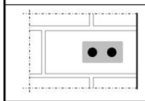
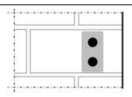
**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry**

**Performances hollow calcium silica brick KSL-8DF**
Description of the stone, Installation parameters, Reductionfactors

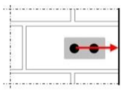
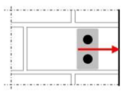
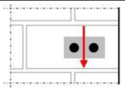
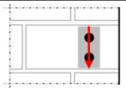
**Annex C 11**

## Brick type: Hollow Calcium silica brick KSL-8DF

### Table C29: Factors for anchor groups under tension load

| Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|
|  | with c ≥ | with s ≥ | $\alpha_{g\ II,\ N}$ |  | with c ≥ | with s ≥ | $\alpha_{g\ \perp,\ N}$ |
| | 50 | 50 | 1,00 | | 50 | 50 | 1,00 |
| | 120 | 250 | 2,00 | | 120 | 120 | 2,00 |

### Table C30: Factors for anchor groups under shear load

| | Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|---|
| Shear load perpendicular to the free edge |  | with c ≥ | with s ≥ | $\alpha_{g\ II,V\perp}$ |  | with c ≥ | with s ≥ | $\alpha_{g\ \perp,V\perp}$ |
| | | 50 | 50 | 0,45 | | 50 | 50 | 0,45 |
| | | 250 | 50 | 1,15 | | 250 | 50 | 1,20 |
| | | 250 | 250 | 2,00 | | 250 | 250 | 2,00 |
| Shear load parallel to the free edge |  | with c ≥ | with s ≥ | $\alpha_{g\ II,V\ II}$ |  | with c ≥ | with s ≥ | $\alpha_{g\ \perp,V\ II}$ |
| | | 50 | 50 | 1,30 | | 50 | 50 | 1,00 |
| | | 120 | 250 | 2,00 | | 120 | 250 | 2,00 |

### Table C31: Characteristic values of tension and shear load resistances

| Anchor size | Perforated sleeve | Effecitve Anchorage depth | Characteristic Resistances with c ≥ $c_{cr}$ and s ≥ $s_{cr}$ | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Use condition | | | | | | |
| | | | d/d | | | w/d w/w | | | d/d w/d w/w |
| | | | 40°C/24°C | 80°C/50°C | 120°C/72°C | 40°C/24°C | 80°C/50°C | 120°C/72°C | All Temperature ranges |
| | | $h_{ef}$ | $N_{Rk,b} = N_{Rk,p}$ 2) | | | $N_{Rk,b} = N_{Rk,p}$ 2) | | | $V_{Rk,b}$ 2) |
| | | [mm] | [kN] | | | | | | |
| **Normalised mean compressive strength $f_b \geq 12$ N/mm² 1)** | | | | | | | | | |
| M8 / M10/ IG-M6 | SH 16 | 130 | 5,0 | 4,5 | 3,5 | 5,0 | 4,5 | 3,5 | 3,5 |
| M12 / M16 / IG-M8 / IG-M10 | SH 20 | ≥ 130 | 5,0 | 4,5 | 3,5 | 5,0 | 4,5 | 3,5 | 6,0 |

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C26. For stones with higher strengths, the shown values are valid without conversion.

2) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\ II} = V_{Rk,c\perp}$ according to Annex C 3

### Table C32: Displacements

| Anchor size | $h_{ef}$ | $\delta N$ / N | $\delta N0$ | $\delta N\infty$ | $\delta V$ / V | $\delta V0$ | $\delta V\infty$ |
|---|---|---|---|---|---|---|---|
| | [mm] | [mm/kN] | [mm] | [mm] | [mm/kN] | [mm] | [mm] |
| M8 – M12 / IG-M6 – M10 | all | 0,13 | 0,13*$N_{Rk}$ / 3,5 | 2*$\delta N0$ | 0,55 | 0,55*$V_{Rk}$ / 3,5 | 1,5*$\delta V0$ |
| M16 | all | | | | 0,31 | 0,31*$V_{Rk}$ / 3,5 | 1,5*$\delta V0$ |

**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry**

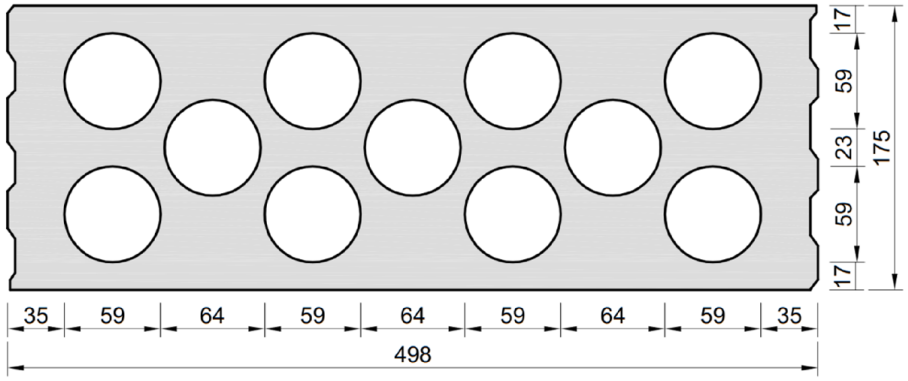
**Performances hollow calcium silica brick KSL-8DF**
Group factors, characteristic Resistances and Displacements

**Annex C 12**

## Brick type: Hollow Calcium silica brick KSL-12DF

### Table C33: Stone description

| | | |
|---|---|---|
| Brick type | | Hollow Calcium silica brick KSL-12DF |
| Density | $\rho$ [kg/dm³] | ≥ 1,4 |
| Normalised mean compressive strenght | $f_b$ [N/mm²] | ≥ 12 |
| Conversion factor for lower compressive strengths | | $(f_b / 12)^{0,75} \leq 1,0$ |
| Code | | EN 771-2:2011+A1:2015 |
| Producer (Country) | | e.g. KS-Wemding (DE) |
| Brick dimensions | [mm] | ≥ 498 x 175 x 238 |
| Drilling method | | Rotary drilling |




### Table C34: Installation parameter

| Anchor size | | [-] | M8 | M10 | M12 | M16 | IG-M6 | IG-M8 | IG-M10 |
|---|---|---|---|---|---|---|---|---|---|
| Installation torque | $T_{inst}$ | [Nm] | ≤ 4 | ≤ 4 | ≤ 5 | ≤ 5 | ≤ 4 | ≤ 5 | ≤ 5 |
| Char. Edge distance (under fire conditions) | $c_{cr}$; ($c_{cr,fi}$) | [mm] | 120 (2 $h_{ef}$) (for shear loads perpendicular to the free edge: $c_{cr}$ = 500) | | | | | | |
| Minimum Edge Distance | $c_{min}$ | [mm] | 50 | | | | | | |
| Characteristic Spacing (under fire conditions) | $s_{cr,\parallel}$; ($s_{cr,fi,\parallel}$) | [mm] | 500 (4 $h_{ef}$) | | | | | | |
| | $s_{cr,\perp}$; ($s_{cr,fi,\perp}$) | [mm] | 120 (4 $h_{ef}$) | | | | | | |
| Minimum Spacing | $s_{min,\parallel}$; $s_{min,\perp}$ | [mm] | 50 | | | | | | |

### Table C35: Reduction factors for single anchors at the edge

| Tension load | | | Shear load | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Perpendicular to the free edge | | | Parallel to the free edge | | |
| | with c ≥ | $\alpha_{edge,N}$ | | with c ≥ | $\alpha_{edge,V\perp}$ | | with c ≥ | $\alpha_{edge,V\parallel}$ |
| | 50 | 1,00 | | 50 | 0,45 | | 50 | 1,00 |
| | 120 | 1,00 | | 500 | 1,00 | | 120 | 1,00 |

### Table C36: Factors for anchor groups under tension load

| Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|
| | with c ≥ | with s ≥ | $\alpha_{g\parallel,N}$ | | with c ≥ | with s ≥ | $\alpha_{g\perp,N}$ |
| | 50 | 50 | 1,50 | | 50 | 50 | 1,00 |
| | 120 | 500 | 2,00 | | 120 | 240 | 2,00 |

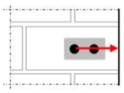
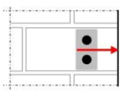
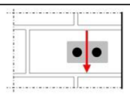
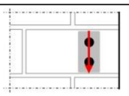
**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry**

**Performances hollow calcium silica brick KSL-12DF**
Description of the stone, Installation parameters, Reductionfactors

**Annex C 13**

## Brick type: Hollow Calcium silica brick KSL-12DF

### Table C37: Factors for anchor groups under shear load

| | Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|---|
| Shear load perpendicular to the free edge |  | with c ≥ | with s ≥ | $\alpha_{g\,II,V\perp}$ |  | with c ≥ | with s ≥ | $\alpha_{g\,\perp,V\perp}$ |
| | | 50 | 50 | 0,55 | | 50 | 50 | 0,50 |
| | | 500 | 50 | 1,00 | | 500 | 50 | 1,00 |
| | | 500 | 500 | 2,00 | | 500 | 250 | 2,00 |
| Shear load parallel to the free edge |  | with c ≥ | with s ≥ | $\alpha_{g\,II,V\,II}$ |  | with c ≥ | with s ≥ | $\alpha_{g\,\perp,V\,II}$ |
| | | 50 | 50 | 2,00 | | 50 | 50 | 1,30 |
| | | 120 | 500 | 2,00 | | 120 | 250 | 2,00 |

### Table C38: Characteristic values of tension and shear load resistances

| Anchor size | Perforated sleeve | Effective Anchorage depth | Characteristic Resistances with c ≥ $c_{cr}$ and s ≥ $s_{cr}$ | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Use condition | | | | | | |
| | | | d/d | | | w/d w/w | | | d/d w/w (w/d) |
| | | | 40°C/24°C | 80°C/50°C | 120°C/72°C | 40°C/24°C | 80°C/50°C | 120°C/72°C | All temperature ranges |
| | | $h_{ef}$ | $N_{Rk,b} = N_{Rk,p}$ [2)] | | | $N_{Rk,b} = N_{Rk,p}$ [2)] | | | $V_{Rk,b}$ [2)] |
| | | [mm] | [kN] | | | | | | |
| **Normalised mean compressive strength $f_b \geq 12$ N/mm² [1)]** | | | | | | | | | |
| M8 / M10/ IG-M6 | SH 16 | 130 | 3,5 | 3,5 | 2,5 | 3,5 | 3,5 | 2,5 | 3,5 |
| M12 / M16 / IG-M8 / IG-M10 | SH 20 | ≥ 130 | 3,5 | 3,5 | 2,5 | 3,5 | 3,5 | 2,5 | 7,0 |

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C33. For stones with higher strengths, the shown values are valid without conversion.

2) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\,II} = V_{Rk,c\perp}$ according to Annex C 3

### Table C39: Displacements

| Anchor size | $h_{ef}$ | $\delta N$ / N | $\delta N_0$ | $\delta N_\infty$ | $\delta V$ / V | $\delta V_0$ | $\delta V_\infty$ |
|---|---|---|---|---|---|---|---|
| | [mm] | [mm/kN] | [mm] | [mm] | [mm/kN] | [mm] | [mm] |
| M8 – M12 / IG-M6 – M10 | all | 0,13 | 0,13*$N_{Rk}$ / 3,5 | 2*$\delta N_0$ | 0,55 | 0,55*$V_{Rk}$ / 3,5 | 1,5*$\delta V_0$ |
| M16 | all | | | | 0,31 | 0,31*$V_{Rk}$ / 3,5 | 1,5*$\delta V_0$ |

### Table C40: Characteristic values of tension and shear load resistances under fire exposure

| Anchor size | Perforated sleeve | Effective anchorage depth | Characteristic Resistances $N_{Rk,b,fi} = N_{Rk,p,fi} = V_{Rk,b,fi}$ | | | |
|---|---|---|---|---|---|---|
| | | $h_{ef}$ | R30 | R60 | R90 | R120 |
| | | [mm] | [kN] | | | |
| M8 / M10 /IG-M6 | SH 16 | 130 | 0,37 | 0,27 | 0,17 | -[1)] |
| M12 / IG-M8 | SH 20 | ≥ 130 | | | | |
| M16 / IG-M10 | SH 20 | ≥ 130 | | | | 0,12 |

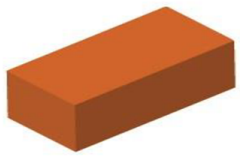
1) no performance assessed

| | |
|---|---|
| **Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry** | **Annex C 14** |
| **Performances hollow calcium silica brick KSL-12DF**<br>Group factors, characteristic Resistances and Displacements | |

## Brick type: Solid clay brick 1DF

### Table C41: Stone description

| | | |
|---|---|---|
| Brick type | | Solid clay brick Mz-1DF |
| Density | $\rho$ [kg/dm³] | ≥ 2,0 |
| Normalised mean compressive strenght | $f_b$ [N/mm²] | ≥ 20 |
| Conversion factor for lower compressive strengths | | $(f_b / 20)^{0,5} \leq 1,0$ |
| Code | | EN 771-1:2011+A1:2015 |
| Producer (Country) | | e.g. Wienerberger (DE) |
| Brick dimensions | [mm] | ≥ 240 x 115 x 55 |
| Drilling method | | Hammer drilling |



### Table C42: Installation parameter

| Anchor size | | [-] | M8 | M10 | M12 | M16 | IG-M6 | IG-M8 | IG-M10 |
|---|---|---|---|---|---|---|---|---|---|
| Installation torque | $T_{inst}$ | [Nm] | ≤ 10 | ≤ 10 | ≤ 10 | ≤ 10 | ≤ 10 | ≤ 10 | ≤ 10 |
| Char. Edge distance | $c_{cr}$ | [mm] | 150 (for shear loads perpendicular to the free edge: $c_{cr}$ = 240) | | | | | | |
| Minimum Edge Distance | $c_{min}$ | [mm] | 60 | | | | | | |
| Characteristic Spacing | $s_{cr, II}$ | [mm] | 240 | | | | | | |
| | $s_{cr, \perp}$ | [mm] | 130 | | | | | | |
| Minimum Spacing | $s_{min, II}$; $s_{min, \perp}$ | [mm] | 65 | | | | | | |

### Table C43: Reduction factors for single anchors at the edge

| Tension load | | | Shear load | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Perpendicular to the free edge | | | Parallel to the free edge | | |
| | with c ≥ | $\alpha_{edge, N}$ | | with c ≥ | $\alpha_{edge, V \perp}$ | | with c ≥ | $\alpha_{edge, V II}$ |
| | 60 | 0,75 | | 60 | 0,10 | | 60 | 0,30 |
| | 150 | 1,00 | | 100 | 0,50 | | 100 | 0,65 |
| | 180 | 1,00 | | 240 | 1,00 | | 150 | 1,00 |

### Table C44: Factors for anchor groups under tension load

| Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|
| | with c ≥ | with s ≥ | $\alpha_{g II, N}$ | | with c ≥ | with s ≥ | $\alpha_{g \perp, N}$ |
| | 60 | 65 | 0,85 | | 60 | 65 | 1,00 |
| | 150 | 65 | 1,15 | | 150 | 65 | 1,20 |
| | 150 | 240 | 2,00 | | 150 | 130 | 2,00 |

### Table C45: Factors for anchor groups under shear load

| | Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|---|
| Shear load perpendicular to the free edge | | with c ≥ | with s ≥ | $\alpha_{g II, V \perp}$ | | with c ≥ | with s ≥ | $\alpha_{g \perp, V \perp}$ |
| | | 60 | 65 | 0,40 | | 60 | 65 | 0,30 |
| | | 240 | 65 | 2,00 | | 240 | 65 | 2,00 |
| | | 240 | 240 | 2,00 | | 240 | 130 | 2,00 |
| Shear load parallel to the free edge | | with c ≥ | with s ≥ | $\alpha_{g II, V II}$ | | with c ≥ | with s ≥ | $\alpha_{g \perp, V II}$ |
| | | 60 | 65 | 1,75 | | 60 | 65 | 1,10 |
| | | 150 | 65 | 2,00 | | 150 | 65 | 2,00 |
| | | 150 | 240 | 2,00 | | 150 | 130 | 2,00 |

**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry**

**Performances solid clay brick 1DF**
Description of the stone, Installation parameters, Reduction- and Group factors

**Annex C 15**

## Brick type: Solid clay brick 1DF

### Table C46: Characteristic values of tension and shear load resistances

| Anchor size | Perforated sleeve | Effecitve Anchorage depth | Characteristic Resistances with $c \geq c_{cr}$ and $s \geq s_{cr}$ | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Use condition | | | | | | |
| | | | d/d | | | w/d<br>w/w | | | d/d<br>w/d<br>w/w |
| | | | 40°C/24°C | 80°C/50°C | 120°C/72°C | 40°C/24°C | 80°C/50°C | 120°C/72°C | All temperature ranges |
| | | $h_{ef}$ | $N_{Rk,b} = N_{Rk,p}$ 2) | | | $N_{Rk,b} = N_{Rk,p}$ 2) | | | $V_{Rk,b}$ 2) |
| | | [mm] | [kN] | | | | | | |
| **Normalised mean compressive strength $f_b \geq 20$ N/mm² 1)** | | | | | | | | | |
| M8 | - | 80 | 7,0 | 6,0 | 6,0 | 7,0 | 6,0 | 6,0 | 8,0 |
| M10 / IG-M6 | - | ≥ 90 | | | | | | | |
| M12 / IG-M8 | - | ≥ 100 | | | | | | | |
| M16 / IG-M10 | - | ≥ 100 | 8,0 | 6,5 | 6,5 | 8,0 | 6,5 | 6,5 | 12,0 |
| M8 | SH 12 | 80 | 7,0 | 6,0 | 6,0 | 7,0 | 6,0 | 6,0 | 8,0 |
| M8 / M10/ IG-M6 | SH 16 | ≥ 85 | | | | | | | |
| M12 / IG-M8 | SH 20 | | | | | | | | |
| M16 / IG-M10 | SH 20 | ≥ 85 | 8,0 | 6,5 | 6,5 | 8,0 | 6,5 | 6,5 | 12,0 |

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C41. For stones with higher strengths, the shown values are valid without conversion.

2) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\,II} = V_{Rk,c\,\perp}$ according to Annex C 3

### Table C47: Displacements

| Anchor size | $h_{ef}$ | $\delta_N$ / N | $\delta_{N0}$ | $\delta_{N\infty}$ | $\delta_V$ / V | $\delta_{V0}$ | $\delta_{V\infty}$ |
|---|---|---|---|---|---|---|---|
| | [mm] | [mm/kN] | [mm] | [mm] | [mm/kN] | [mm] | [mm] |
| M8 – M12 / IG-M6 – M10 | all | 0,1 | $0,1*N_{Rk} / 3,5$ | $2*\delta_{N0}$ | 0,3 | $0,3*V_{Rk} / 3,5$ | $1,5*\delta_{V0}$ |
| M16 | all | | | | 0,1 | $0,1*V_{Rk} / 3,5$ | $1,5*\delta_{V0}$ |

**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry**

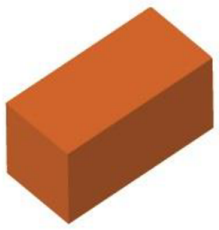
**Performances solid clay brick 1DF**
Characteristic Resistances and Displacements

**Annex C 16**

## Brick type: Solid clay brick 2DF

### Table C48: Stone description

| | | |
|---|---|---|
| Brick type | | Solid clay brick Mz- 2DF |
| Density | ρ [kg/dm³] | ≥ 2,0 |
| Normalised mean compressive strenght | $f_b$ [N/mm²] | ≥ 28 |
| Conversion factor for lower compressive strengths | | $(f_b / 28)^{0,5} \leq 1,0$ |
| Code | | EN 771-1:2011+A1:2015 |
| Producer (Country) | | e.g. Wienerberger (DE) |
| Brick dimensions | [mm] | ≥ 240 x 115 x 113 |
| Drilling method | | Hammer drilling |



### Table C49: Installation parameter

| Anchor size | | [-] | M8 | M10 | M12 | M16 | IG-M6 | IG-M8 | IG-M10 |
|---|---|---|---|---|---|---|---|---|---|
| Installation torque | $T_{inst}$ | [Nm] | ≤ 10 | ≤ 10 | ≤ 10 | ≤ 10 | ≤ 10 | ≤ 10 | ≤ 10 |
| Char. Edge distance (under fire conditions) | $c_{cr}$; ($c_{cr,fi}$) | [mm] | 150 (2 $h_{ef}$) (for shear loads perpendicular to the free edge: $c_{cr}$ = 240) | | | | | | |
| Minimum Edge Distance | $c_{min}$ | [mm] | 50 | | | | | | |
| Characteristic Spacing (under fire conditions) | $s_{cr,\parallel}$; ($s_{cr,fi,\parallel}$) | [mm] | 240 (4 $h_{ef}$) | | | | | | |
| | $s_{cr,\perp}$; ($s_{cr,fi,\perp}$) | [mm] | 240 (4 $h_{ef}$) | | | | | | |
| Minimum Spacing | $s_{min,\parallel}$; $s_{min,\perp}$ | [mm] | 50 | | | | | | |

### Table C50: Reduction factors for single anchors at the edge

| Tension load | | | Shear load perpendicular to free edge | | | Shear load parallel to free edge | | |
|---|---|---|---|---|---|---|---|---|
| | with c ≥ | $\alpha_{edge,N}$ | | with c ≥ | $\alpha_{edge,V\perp}$ | | with c ≥ | $\alpha_{edge,V\parallel}$ |
| | 50[1)] | 1,00 | | 50 | 0,20 | | 50 | 1,00 |
| | 150[1)] | 1,00 | | 125 | 0,50 | | | |
| | 180 | 1,00 | | 240 | 1,00 | | 150 | 1,00 |

1) All applications, except for hef = 200mm and without sleeve

### Table C51: Factors for anchor groups under tension load

| Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|
| | with c ≥ | with s ≥ | $\alpha_{g\parallel,N}$ | | with c ≥ | with s ≥ | $\alpha_{g\perp,N}$ |
| | 50[1)] | 50 | 1,50 | | 50[1)] | 50 | 0,80 |
| | 150[1)] | 240 | 2,00 | | 150[1)] | 240 | 2,00 |
| | 180[2)] | 60 | 1,00 | | 180[2)] | 60 | 1,00 |
| | 180[2)] | 240 | 1,55 | | 180[2)] | 120 | 2,00 |
| | 240[2)] | 240 | 2,00 | | | | |

1) All applications, except for hef = 200mm and without sleeve
2) Only for application with hef = 200mm and without sleeve

### Table C52: Factors for anchor groups under shear load

| | Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|---|
| Shear load perpendicular to the free edge | | with c ≥ | with s ≥ | $\alpha_{g\parallel,V\perp}$ | | with c ≥ | with s ≥ | $\alpha_{g\perp,V\perp}$ |
| | | 50 | 50 | 0,40 | | 50 | 50 | 0,20 |
| | | 240 | 50 | 1,20 | | 240 | 50 | 0,60 |
| | | 240 | 240 | 2,00 | | 240 | 125 | 1,00 |
| | | | | | | 240 | 240 | 2,00 |
| Shear load parallel to the free edge | | with c ≥ | with s ≥ | $\alpha_{g\parallel,V\parallel}$ | | with c ≥ | with s ≥ | $\alpha_{g\perp,V\parallel}$ |
| | | 50 | 50 | 1,20 | | 50 | 50 | 1,00 |
| | | 150 | 240 | 2,00 | | 50 | 125 | 1,00 |
| | | | | | | 150 | 240 | 2,00 |

**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry**

**Performances solid clay brick 2DF**
Description of the stone, Installation parameters, Reduction- and Group factors

**Annex C 17**

## Brick type: Solid clay brick 2DF

### Table C53: Characteristic values of tension and shear load resistances

| Anchor size | Perforated sleeve | Effecitve Anchorage depth | Characteristic Resistances with $c \geq c_{cr}$ and $s \geq s_{cr}$ | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Use condition | | | | | | |
| | | | d/d | | | w/d<br>w/w | | | d/d<br>w/d<br>w/w |
| | | | 40°C/24°C | 80°C/50°C | 120°C/72°C | 40°C/24°C | 80°C/50°C | 120°C/72°C | All temperature ranges |
| | | $h_{ef}$ | $N_{Rk,b} = N_{Rk,p}$ [2)] | | | $N_{Rk,b} = N_{Rk,p}$ [2)] | | | $V_{Rk,b}$ [2)] |
| | | [mm] | [kN] | | | | | | |
| **Normalised mean compressive strength $f_b \geq 28$ N/mm² [1)]** | | | | | | | | | |
| M8 | - | 80 | 9,0 | 9,0 | 7,5 | 9,0 | 9,0 | 7,5 | 9,5 |
| M10 / IG-M6 | - | ≥ 90 | | | | | | | |
| M12 / IG-M8 | - | ≥ 100 | 9,0 | 9,0 | 7,5 | 9,0 | 9,0 | 7,5 | 12 |
| M16 / IG-M10 | - | ≥ 100 | 9,0 | 9,0 | 7,5 | 9,0 | 9,0 | 7,5 | 12 [3)] |
| M10 / M12 / IG-M6 / IG-M8 | - | 200 | 11,5 | 11,5 | 10,0 | 6,0 | 6,0 | 5,0 | 8,0 |
| M16 / IG-M10 | - | 200 | 11,5 | 11,5 | 10,0 | 6,0 | 6,0 | 5,0 | 12,0 |
| M8 | SH 12 | 80 | 9,0 | 9,0 | 7,5 | 9,0 | 9,0 | 7,5 | 9,5 |
| M8 / M10/ IG-M6 | SH 16 | ≥ 85 | | | | | | | |
| M12 / IG-M8 | SH 20 | ≥ 85 | 9,0 | 9,0 | 7,5 | 9,0 | 9,0 | 7,5 | 12,0 |
| M16 / IG-M10 | SH 20 | ≥ 85 | 9,0 | 9,0 | 7,5 | 9,0 | 9,0 | 7,5 | 12,0 [3)] |

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C48. For stones with higher strengths, the shown values are valid without conversion.

2) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\,II} = V_{Rk,c\perp}$ according to Annex C 3

3) Valid for all stone strengths with min. 10 N/mm²

### Table C54: Displacements

| Anchor size | $h_{ef}$ | $\delta N$ / N | $\delta N0$ | $\delta N\infty$ | $\delta V$ / V | $\delta V0$ | $\delta V\infty$ |
|---|---|---|---|---|---|---|---|
| | [mm] | [mm/kN] | [mm] | [mm] | [mm/kN] | [mm] | [mm] |
| M8 – M12 / IG-M6 – M10 | all | 0,1 | $0,1*N_{Rk}$ / 3,5 | $2*\delta N0$ | 0,3 | $0,3*V_{Rk}$ / 3,5 | $1,5*\delta V0$ |
| M16 | all | | | | 0,1 | $0,1*V_{Rk}$ / 3,5 | $1,5*\delta V0$ |

### Table C55: Characteristic values of tension and shear load resistances under fire exposure

| Anchor size | Perforated sleeve | Effecitve Anchorage depth | Characteristic Resistances $N_{Rk,b,fi} = N_{Rk,p,fi} = V_{Rk,b,fi}$ | | | |
|---|---|---|---|---|---|---|
| | | $h_{ef}$ | R30 | R60 | R90 | R120 |
| | | [mm] | [kN] | | | |
| M8 | - | 80 | 0,51 | 0,44 | 0,36 | 0,33 |
| M10 / IG-M6 | - | ≥ 90 | | | | |
| M12 / IG-M8 | - | ≥ 100 | | | | |
| M16 / IG-M10 | - | ≥ 100 | | | | |
| M8 | SH 12 | 80 | 0,36 | 0,26 | 0,15 | 0,10 |
| M8 / M10 /IG-M6 | SH 16 | ≥ 85 | 0,36 | 0,26 | 0,15 | 0,10 |
| | | 130 | 0,92 | 0,74 | 0,57 | 0,49 |
| M12 / M16 / IG-M8 /IG-M10 | SH 20 | ≥ 85 | 0,36 | 0,26 | 0,15 | 0,10 |
| | | ≥ 130 | 0,92 | 0,74 | 0,57 | 0,49 |

**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry**

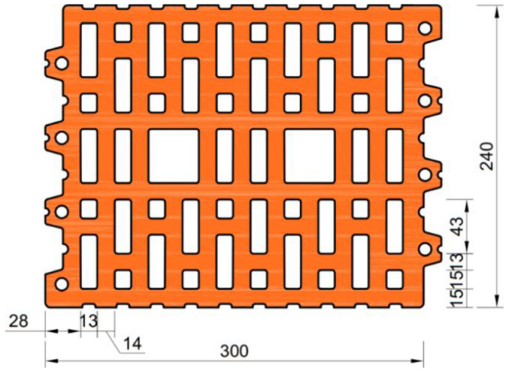
**Performances solid clay brick 2DF**
Characteristic Resistances and Displacements

**Annex C 18**

## Brick type: Hollow clay brick 10 DF

### Table C56: Stone description

| | | |
|---|---|---|
| Brick type | | Hollow clay brick HLZ-10DF |
| Density | $\rho$ [kg/dm³] | ≥ 1,25 |
| Normalised mean compressive strenght | $f_b$ [N/mm²] | ≥ 20 |
| Conversion factor for lower compressive strengths | | $(f_b / 20)^{0,5} \leq 1,0$ |
| Code | | EN 771-1:2011+A1:2015 |
| Producer (Country) | | e.g. Wienerberger (DE) |
| Brick dimensions | [mm] | 300 x 240 x 249 |
| Drilling method | | Rotary drilling |




### Table C57: Installation parameter

| Anchor size | | [-] | M8 | M10 | M12 | M16 | IG-M6 | IG-M8 | IG-M10 |
|---|---|---|---|---|---|---|---|---|---|
| Installation torque | $T_{inst}$ | [Nm] | ≤ 5 | ≤ 10 | ≤ 10 | ≤ 10 | ≤ 5 | ≤ 5 | ≤ 10 |
| Char. Edge distance (under fire conditions) | $c_{cr}$; ($c_{cr,fi}$) | [mm] | 120 (2 $h_{ef}$) (for shear loads perpendicular to the free edge: $c_{cr}$ = 300) | | | | | | |
| Minimum Edge Distance | $c_{min}$ | [mm] | 50 | | | | | | |
| Characteristic Spacing (under fire conditions) | $s_{cr,\,II}$; ($s_{cr,fi,\,II}$) | [mm] | 300 (4 $h_{ef}$) | | | | | | |
| | $s_{cr,\,\perp}$; ($s_{cr,fi,\,\perp}$) | [mm] | 250 (4 $h_{ef}$) | | | | | | |
| Minimum Spacing | $s_{min,\,II}$; $s_{min,\,\perp}$ | [mm] | 50 | | | | | | |

### Table C58: Reduction factors for single anchors at the edge

| Tension load | | | Shear load | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Perpendicular to the free edge | | | Parallel to the free edge | | |
| | with c ≥ | $\alpha_{edge,\,N}$ | | with c ≥ | $\alpha_{edge,\,V\,\perp}$ | | with c ≥ | $\alpha_{edge,\,V\,II}$ |
| | 50 | 1,00 | | 50 | 0,20 | | 50 | 1,00 |
| | 120 | 1,00 | | 300 | 1,00 | | 120 | 1,00 |

### Table C59: Factors for anchor groups under tension load

| Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|
| | with c ≥ | with s ≥ | $\alpha_{g\,II,\,N}$ | | with c ≥ | with s ≥ | $\alpha_{g\,\perp,\,N}$ |
| | 50 | 50 | 1,55 | | 50 | 50 | 1,00 |
| | 120 | 300 | 2,00 | | 120 | 250 | 2,00 |

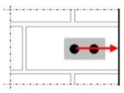
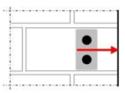
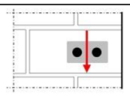
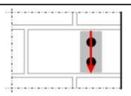
**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry**

**Performances hollow clay brick HLZ 10DF**
Description of the stone, Installation parameters, Reductionfactors

**Annex C 19**

## Brick type: Hollow clay brick 10 DF

### Table C60: Factors for anchor groups under shear load

| | Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|---|
| Shear load perpendicular to the free edge |  | with c ≥ | with s ≥ | $\alpha_{g\,II,V\perp}$ |  | with c ≥ | with s ≥ | $\alpha_{g\perp,V\perp}$ |
| | | 50 | 50 | 0,30 | | 50 | 50 | 0,20 |
| | | 300 | 50 | 1,40 | | 300 | 50 | 1,00 |
| | | 300 | 300 | 2,00 | | 300 | 250 | 2,00 |
| Shear load parallel to the free edge |  | with c ≥ | with s ≥ | $\alpha_{g\,II,V\,II}$ |  | with c ≥ | with s ≥ | $\alpha_{g\perp,V\,II}$ |
| | | 50 | 50 | 1,85 | | 50 | 50 | 1,00 |
| | | 120 | 300 | 2,00 | | 120 | 250 | 2,00 |

### Table C61: Characteristic values of tension and shear load resistances

| Anchor size | Perforated sleeve | Effective Anchorage depth | Characteristic Resistances with c ≥ $c_{cr}$ and s ≥ $s_{cr}$ | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Use condition | | | | | | |
| | | | d/d | | | w/d w/w | | | d/d w/d w/w |
| | | | 40°C/24°C | 80°C/50°C | 120°C/72°C | 40°C/24°C | 80°C/50°C | 120°C/72°C | All temperature ranges |
| | | $h_{ef}$ | $N_{Rk,b} = N_{Rk,p}$ [2)] | | | $N_{Rk,b} = N_{Rk,p}$ [2)] | | | $V_{Rk,b}$ [2)] |
| | | [mm] | [kN] | | | | | | |
| **Normalised mean compressive strength $f_b \geq 20$ N/mm² 1)** | | | | | | | | | |
| M8 | SH 12 | 80 | 2,5 | 2,5 | 2,0 | 2,5 | 2,5 | 2,0 | 8,0 |
| M8 / M10/ IG-M6 | SH 16 | ≥ 85 | | | | | | | |
| M12 / IG-M8 | SH 20 | ≥ 85 | 5,0 | 5,0 | 4,5 | 5,0 | 5,0 | 4,5 | 8,0 |
| M16 / IG-M10 | SH 20 | ≥ 85 | 5,0 | 5,0 | 4,5 | 5,0 | 5,0 | 4,5 | 11,5 |

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C56. For stones with higher strengths, the shown values are valid without conversion.

2) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\,II} = V_{Rk,c\perp}$ according to Annex C 3

### Table C62: Displacements

| Anchor size | $h_{ef}$ | $\delta N$ / N | $\delta N0$ | $\delta N\infty$ | $\delta V$ / V | $\delta V0$ | $\delta V\infty$ |
|---|---|---|---|---|---|---|---|
| | [mm] | [mm/kN] | [mm] | [mm] | [mm/kN] | [mm] | [mm] |
| M8 – M12 / IG-M6 – M10 | all | 0,13 | 0,13*$N_{Rk}$ / 3,5 | 2*$\delta N0$ | 0,55 | 0,55*$V_{Rk}$ / 3,5 | 1,5*$\delta V0$ |
| M16 | all | | | | 0,31 | 0,31*$V_{Rk}$ / 3,5 | 1,5*$\delta V0$ |

### Table C63: Characteristic values of tension and shear load resistances under fire exposure

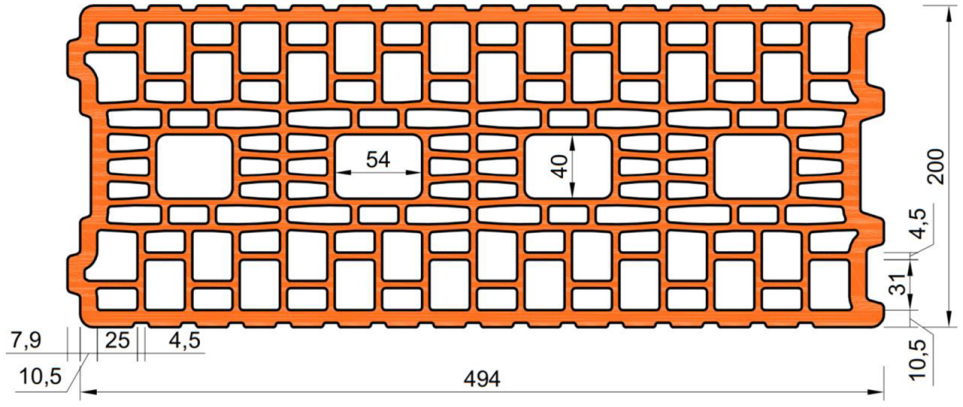
| Anchor size | Perforated sleeve | Effecitve Anchorage depth | Characteristic Resistances $N_{Rk,b,fi} = N_{Rk,p,fi} = V_{Rk,b,fi}$ | | | |
|---|---|---|---|---|---|---|
| | | $h_{ef}$ | R30 | R60 | R90 | R120 |
| | | [mm] | [kN] | | | |
| M8 / M10 /IG-M6 | SH 16 | 130 | 0,57 | 0,39 | 0,21 | 0,12 |
| M12 / M16 / IG-M8 IG-M10 | SH 20 | ≥ 130 | | | | |

| | |
|---|---|
| **Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry** | **Annex C 20** |
| **Performances hollow clay brick HLZ 10DF**<br>Group factors, characteristic Resistances and Displacements | |

## Brick type: Hollow Clay brick Porotherm Homebric

### Table C64: Stone description

| | | |
|---|---|---|
| Brick type | | Hollow clay brick Porotherm Homebric |
| Density | $\rho$ [kg/dm³] | ≥ 0,70 |
| Normalised mean compressive strenght | $f_b$ [N/mm²] | ≥ 10 |
| Conversion factor for lower compressive strengths | | $(f_b / 10)^{0,5} \leq 1,0$ |
| Code | | EN 771-1:2011+A1:2015 |
| Producer (Country) | | e.g. Wienerberger (FR) |
| Brick dimensions | [mm] | 500 x 200 x 300 |
| Drilling method | | Rotary drilling |




### Table C65: Installation parameter

| Anchor size | | [-] | M8 | M10 | M12 | M16 | IG-M6 | IG-M8 | IG-M10 |
|---|---|---|---|---|---|---|---|---|---|
| Installation torque | $T_{inst}$ | [Nm] | ≤ 2 | ≤ 2 | ≤ 2 | ≤ 2 | ≤ 2 | ≤ 2 | ≤ 2 |
| Char. Edge distance | $c_{cr}$ | [mm] | 120 (for shear loads perpendicular to the free edge: $c_{cr}$ = 500) | | | | | | |
| Minimum Edge Distance | $c_{min}$ | [mm] | 120 | | | | | | |
| Characteristic Spacing | $s_{cr, II}$ | [mm] | 500 | | | | | | |
| | $s_{cr, \perp}$ | [mm] | 300 | | | | | | |
| Minimum Spacing | $s_{min, II}$; $s_{min, \perp}$ | [mm] | 120 | | | | | | |

### Table C66: Reduction factors for single anchors at the edge

| Tension load | | | Shear load | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Perpendicular to the free edge | | | Parallel to the free edge | | |
| | with c ≥ | $\alpha_{edge, N}$ | | with c ≥ | $\alpha_{edge, V \perp}$ | | with c ≥ | $\alpha_{edge, V II}$ |
| | 120 | 1,00 | | 120 | 0,30 | | 120 | 0,60 |
| | | | | 250 | 0,60 | | | |
| | 120 | 1,00 | | 500 | 1,00 | | 200 | 1,00 |

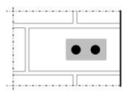
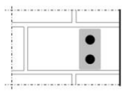
**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry**

**Performances hollow clay brick Porotherm Homebric**
Description of the stone, Installation parameters, Reductionfactors

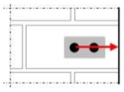
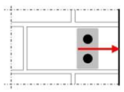
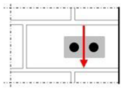
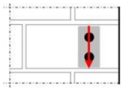
**Annex C 21**

## Brick type: Hollow Clay brick Porotherm Homebric

### Table C67: Factors for anchor groups under tension load

| Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|
| | with c ≥ | with s ≥ | $\alpha_{g\ II,\ N}$ | | with c ≥ | with s ≥ | $\alpha_{g\ \perp,\ N}$ |
|  | 120 | 100 | 1,00 |  | 120 | 100 | 1,00 |
| | 200 | 100 | 2,00 | | 200 | 100 | 1,20 |
| | 120 | 500 | 2,00 | | 120 | 300 | 2,00 |

### Table C68: Factors for anchor groups under shear load

| | Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|---|
| Shear load perpendicular to the free edge |  | with c ≥ | with s ≥ | $\alpha_{g\ II,V\perp}$ |  | with c ≥ | with s ≥ | $\alpha_{g\ \perp,V\perp}$ |
| | | 120 | 100 | 0,30 | | 120 | 100 | 0,30 |
| | | 250 | 100 | 0,60 | | 250 | 100 | 0,60 |
| | | 500 | 100 | 1,00 | | 120 | 300 | 2,00 |
| | | 120 | 500 | 2,00 | | | | |
| Shear load parallel to the free edge |  | with c ≥ | with s ≥ | $\alpha_{g\ II,V\ II}$ |  | with c ≥ | with s ≥ | $\alpha_{g\ \perp,V\ II}$ |
| | | 120 | 100 | 1,00 | | 120 | 100 | 1,00 |
| | | 120 | 500 | 2,00 | | 120 | 300 | 2,00 |

### Table C69: Characteristic values of tension and shear load resistances

| Anchor size | Perforated sleeve | Effective Anchorage depth | Characteristic Resistances with c ≥ $c_{cr}$ and s ≥ $s_{cr}$ | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Use condition | | | | | | |
| | | | d/d | | | w/d<br>w/w | | | d/d<br>w/d<br>w/w |
| | | | 40°C/24°C | 80°C/50°C | 120°C/72°C | 40°C/24°C | 80°C/50°C | 120°C/72°C | All temperature ranges |
| | | $h_{ef}$ | $N_{Rk,b} = N_{Rk,p}$ [2)] | | | $N_{Rk,b} = N_{Rk,p}$ [2)] | | | $V_{Rk,b}$ [2)] |
| | | [mm] | [kN] | | | | | | |
| **Normalised mean compressive strength $f_b \geq 10$ N/mm² [1)]** | | | | | | | | | |
| M8 | SH 12 | 80 | 1,2 | | | | | | 3,0 |
| M8 / M10/ IG-M6 | SH 16 | ≥ 85 | 1,2 | | | | | | 3,0 |
| | | 130 | 1,5 | | | | | | 3,5 |
| M12 / M16/ IG-M8 / IG-M10 | SH 20 | ≥ 85 | 1,2 | | | | | | 4,0 |
| | | ≥ 130 | 1,5 | | | | | | 4,0 |

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C64. For stones with higher strengths, the shown values are valid without conversion.

2) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\ II} = V_{Rk,c\perp}$ according to Annex C 3

### Table C70: Displacements

| Anchor size | $h_{ef}$ | $\delta N$ / N | $\delta N0$ | $\delta N\infty$ | $\delta V$ / V | $\delta V0$ | $\delta V\infty$ |
|---|---|---|---|---|---|---|---|
| | [mm] | [mm/kN] | [mm] | [mm] | [mm/kN] | [mm] | [mm] |
| M8 – M12 / IG-M6 – M10 | all | 0,13 | 0,13*$N_{Rk}$ / 3,5 | 2*$\delta N0$ | 0,55 | 0,55*$V_{Rk}$ / 3,5 | 1,5*$\delta V0$ |
| M16 | all | | | | 0,31 | 0,31*$V_{Rk}$ / 3,5 | 1,5*$\delta V0$ |

**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry**

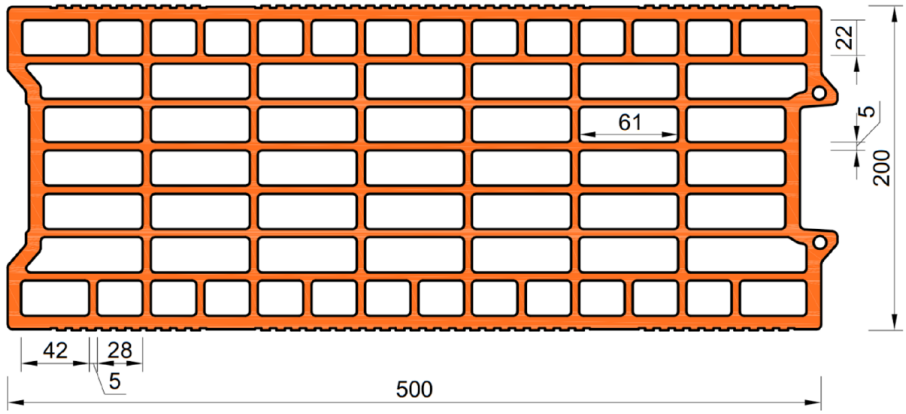
**Performances hollow clay brick Porotherm Homebric**
Group factors, characteristic Resistances and Displacements

**Annex C 22**

## Brick type: Hollow Clay brick BGV Thermo

### Table C71: Stone description

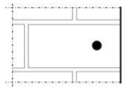
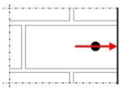
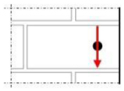
| | | |
|---|---|---|
| Brick type | | Hollow clay brick BGV Thermo |
| Density | $\rho$ [kg/dm³] | ≥ 0,60 |
| Normalised mean compressive strenght | $f_b$ [N/mm²] | ≥ 10 |
| Conversion factor for lower compressive strengths | | $(f_b / 10)^{0,5} \leq 1,0$ |
| Code | | EN 771-1:2011+A1:2015 |
| Producer (Country) | | e.g. Leroux (FR) |
| Brick dimensions | [mm] | 500 x 200 x 314 |
| Drilling method | | Rotary drilling |




### Table C72: Installation parameter

| Anchor size | | [-] | M8 | M10 | M12 | M16 | IG-M6 | IG-M8 | IG-M10 |
|---|---|---|---|---|---|---|---|---|---|
| Installation torque | $T_{inst}$ | [Nm] | ≤ 2 | ≤ 2 | ≤ 2 | ≤ 2 | ≤ 2 | ≤ 2 | ≤ 2 |
| Char. Edge distance | $c_{cr}$ | [mm] | 120 (for shear loads perpendicular to the free edge: $c_{cr}$ = 500) | | | | | | |
| Minimum Edge Distance | $c_{min}$ | [mm] | 120 | | | | | | |
| Characteristic Spacing | $s_{cr, II}$ | [mm] | 500 | | | | | | |
| | $s_{cr, \perp}$ | [mm] | 315 | | | | | | |
| Minimum Spacing | $s_{min, II}$; $s_{min, \perp}$ | [mm] | 120 | | | | | | |

### Table C73: Reduction factors for single anchors at the edge

| Tension load | | | Shear load | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Perpendicular to the free edge | | | Parallel to the free edge | | |
| | with c ≥ | $\alpha_{edge, N}$ | | with c ≥ | $\alpha_{edge, V \perp}$ | | with c ≥ | $\alpha_{edge, V II}$ |
|  | 120 | 1,00 |  | 120 | 0,30 |  | 120 | 0,60 |
| | | | | 250 | 0,60 | | | |
| | 120 | 1,00 | | 500 | 1,00 | | 250 | 1,00 |

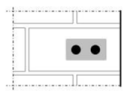
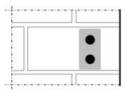
**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry**

**Performances hollow clay brick BGV Thermo**
Description of the stone, Installation parameters, Reductionfactors

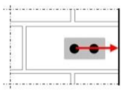
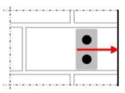
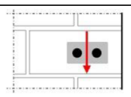
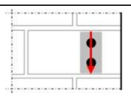
**Annex C 23**

## Brick type: Hollow Clay brick BGV Thermo

### Table C74: Factors for anchor groups under tension load

| Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|
|  | with c ≥ | with s ≥ | $\alpha_{g\ II,\ N}$ |  | with c ≥ | with s ≥ | $\alpha_{g\ \perp,\ N}$ |
| | 120 | 100 | 1,00 | | 120 | 100 | 1,00 |
| | 200 | 100 | 1,70 | | 200 | 100 | 1,10 |
| | 120 | 500 | 2,00 | | 120 | 315 | 2,00 |

### Table C75: Factors for anchor groups under shear load

| | Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|---|
| Shear load perpendicular to the free edge |  | with c ≥ | with s ≥ | $\alpha_{g\ II,V\perp}$ |  | with c ≥ | with s ≥ | $\alpha_{g\ \perp,V\perp}$ |
| | | 120 | 100 | 1,00 | | 120 | 100 | 1,00 |
| | | 120 | 500 | 2,00 | | 120 | 315 | 2,00 |
| Shear load parallel to the free edge |  | with c ≥ | with s ≥ | $\alpha_{g\ II,V\ II}$ |  | with c ≥ | with s ≥ | $\alpha_{g\ \perp,V\ II}$ |
| | | 120 | 100 | 1,00 | | 120 | 100 | 1,00 |
| | | 120 | 500 | 2,00 | | 120 | 315 | 2,00 |

### Table C76: Characteristic values of tension and shear load resistances

| Anchor size | Perforated sleeve | Effective Anchorage depth | Characteristic Resistances with c ≥ $c_{cr}$ and s ≥ $s_{cr}$ | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Use condition | | | | | | |
| | | | d/d | | | w/d w/w | | | d/d w/d w/w |
| | | | 40°C/24°C | 80°C/50°C | 120°C/72°C | 40°C/24°C | 80°C/50°C | 120°C/72°C | All temperature ranges |
| | | $h_{ef}$ | $N_{Rk,b} = N_{Rk,p}$ [2)] | | | $N_{Rk,b} = N_{Rk,p}$ [2)] | | | $V_{Rk,b}$ [2)] |
| | | [mm] | [kN] | | | | | | |
| **Normalised mean compressive strength $f_b \geq 10$ N/mm² [1)]** | | | | | | | | | |
| M8 | SH 12 | 80 | 0,9 | | | | | | 3,5 |
| M8 / M10/ IG-M6 | SH 16 | ≥ 85 | 0,9 | | | | | | 3,5 |
| | | 130 | 2,0 | | 1,5 | 2,0 | | 1,5 | 4,0 |
| M12 / M16 IG-M8 / IG-M10 | SH 20 | ≥ 85 | 0,9 | | | | | | 4,0 |
| | | ≥ 130 | 2,0 | | 1,5 | 2,0 | | 1,5 | 4,0 |

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C71. For stones with higher strengths, the shown values are valid without conversion.

2) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\ II} = V_{Rk,c\ \perp}$ according to Annex C 3

### Table C77: Displacements

| Anchor size | $h_{ef}$ | $\delta N$ / N | $\delta N0$ | $\delta N\infty$ | $\delta V$ / V | $\delta V0$ | $\delta V\infty$ |
|---|---|---|---|---|---|---|---|
| | [mm] | [mm/kN] | [mm] | [mm] | [mm/kN] | [mm] | [mm] |
| M8 – M12 / IG-M6 – M10 | all | 0,13 | 0,13*$N_{Rk}$ / 3,5 | 2*$\delta N0$ | 0,55 | 0,55*$V_{Rk}$ / 3,5 | 1,5*$\delta V0$ |
| M16 | all | | | | 0,31 | 0,31*$V_{Rk}$ / 3,5 | 1,5*$\delta V0$ |

**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry**

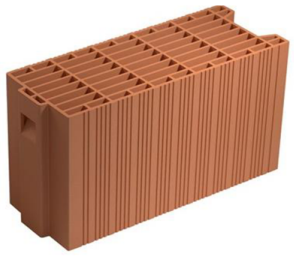
**Performances hollow clay brick BGV Thermo**
Group factors, characteristic Resistances and Displacements

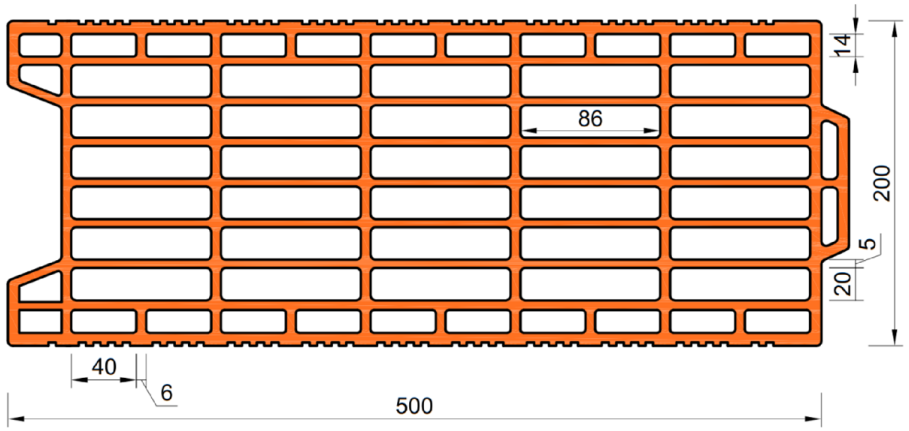
**Annex C 24**

## Brick type: Hollow Clay brick Calibric R+

### Table C78: Stone description

| | | |
|---|---|---|
| Brick type | | Hollow clay brick Calibric R+ |
| Density | $\rho$ [kg/dm³] | ≥ 0,60 |
| Normalised mean compressive strenght | $f_b$ [N/mm²] | ≥ 12 |
| Conversion factor for lower compressive strengths | | $(f_b / 12)^{0,5} \leq 1,0$ |
| Code | | EN 771-1:2011+A1:2015 |
| Producer (Country) | | e.g. Leroux (FR) |
| Brick dimensions | [mm] | 500 x 200 x 314 |
| Drilling method | | Rotary drilling |

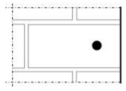
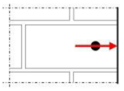
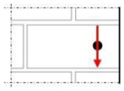





### Table C79: Installation parameter

| Anchor size | | [-] | M8 | M10 | M12 | M16 | IG-M6 | IG-M8 | IG-M10 |
|---|---|---|---|---|---|---|---|---|---|
| Installation torque | $T_{inst}$ | [Nm] | ≤ 2 | ≤ 2 | ≤ 2 | ≤ 2 | ≤ 2 | ≤ 2 | ≤ 2 |
| Char. Edge distance | $c_{cr}$ | [mm] | 120 (for shear loads perpendicular to the free edge: $c_{cr}$ = 500) | | | | | | |
| Minimum Edge Distance | $c_{min}$ | [mm] | 120 | | | | | | |
| Characteristic Spacing | $s_{cr,\,II}$ | [mm] | 500 | | | | | | |
| | $s_{cr,\,\perp}$ | [mm] | 315 | | | | | | |
| Minimum Spacing | $s_{min,\,II}$; $s_{min,\,\perp}$ | [mm] | 120 | | | | | | |

### Table C80: Reduction factors for single anchors at the edge

| Tension load | | | Shear load | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Perpendicular to the free edge | | | Parallel to the free edge | | |
| | with c ≥ | $\alpha_{edge,\,N}$ | | with c ≥ | $\alpha_{edge,\,V\perp}$ | | with c ≥ | $\alpha_{edge,\,V\,II}$ |
|  | 120 | 1,00 |  | 120 | 0,15 |  | 120 | 0,30 |
| | | | | 250 | 0,30 | | | |
| | 120 | 1,00 | | 500 | 1,00 | | 250 | 1,00 |

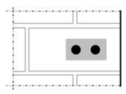
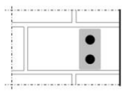
**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry**

**Performances hollow clay brick Calibric R+**
Description of the stone, Installation parameters, Reductionfactors

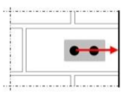
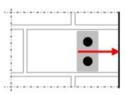
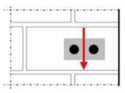
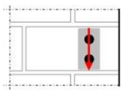
**Annex C 25**

## Brick type: Hollow Clay brick Calibric R+

### Table C81: Factors for anchor groups under tension load

| Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|
| | with c ≥ | with s ≥ | $\alpha_{g\ II,\ N}$ | | with c ≥ | with s ≥ | $\alpha_{g\ \perp,\ N}$ |
|  | 120 | 100 | 1,00 |  | 120 | 100 | 1,00 |
| | 175 | 100 | 1,70 | | 175 | 100 | 1,10 |
| | 120 | 500 | 2,00 | | 120 | 315 | 2,00 |

### Table C82: Factors for anchor groups under shear load

| | Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|---|
| Shear load perpendicular to the free edge |  | with c ≥ | with s ≥ | $\alpha_{g\ II,V\perp}$ |  | with c ≥ | with s ≥ | $\alpha_{g\ \perp,V\perp}$ |
| | | 120 | 100 | 1,00 | | 120 | 100 | 1,00 |
| | | 120 | 500 | 2,00 | | 120 | 315 | 2,00 |
| Shear load parallel to the free edge |  | with c ≥ | with s ≥ | $\alpha_{g\ II,V\ II}$ |  | with c ≥ | with s ≥ | $\alpha_{g\ \perp,V\ II}$ |
| | | 120 | 100 | 1,00 | | 120 | 100 | 1,00 |
| | | 120 | 500 | 2,00 | | 120 | 315 | 2,00 |

### Table C83: Characteristic values of tension and shear load resistances

| Anchor size | Perforated sleeve | Effective Anchorage depth | Characteristic Resistances with c ≥ $c_{cr}$ and s ≥ $s_{cr}$ | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Use condition | | | | | | |
| | | | d/d | | | w/d w/w | | | d/d w/d w/w |
| | | | 40°C/24°C | 80°C/50°C | 120°C/72°C | 40°C/24°C | 80°C/50°C | 120°C/72°C | All temperature ranges |
| | | $h_{ef}$ | $N_{Rk,b} = N_{Rk,p}$ 2) | | | $N_{Rk,b} = N_{Rk,p}$ 2) | | | $V_{Rk,b}$ 2) |
| | | [mm] | [kN] | | | | | | |
| **Normalised mean compressive strength $f_b \geq 12$ N/mm² 1)** | | | | | | | | | |
| M8 | SH 12 | 80 | 1,2 | 1,2 | 0,9 | 1,2 | 1,2 | 0,9 | 4,0 |
| M8 / M10/ IG-M6 | SH 16 | ≥ 85 | 1,2 | 1,2 | 0,9 | 1,2 | 1,2 | 0,9 | 5,5 |
| | | 130 | 1,5 | 1,5 | 1,2 | 1,5 | 1,5 | 1,2 | 5,5 |
| M12 / M16 IG-M8 /IG-M10 | SH 20 | ≥ 85 | 1,2 | 1,2 | 0,9 | 1,2 | 1,2 | 0,9 | 8,5 |
| | | ≥ 130 | 1,5 | 1,5 | 1,2 | 1,5 | 1,5 | 1,2 | 8,5 |

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C78. For stones with higher strengths, the shown values are valid without conversion.

2) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\ II} = V_{Rk,c\perp}$ according to Annex C 3

### Table C84: Displacements

| Anchor size | $h_{ef}$ | $\delta_N$ / N | $\delta_{N0}$ | $\delta_{N\infty}$ | $\delta_V$ / V | $\delta_{V0}$ | $\delta_{V\infty}$ |
|---|---|---|---|---|---|---|---|
| | [mm] | [mm/kN] | [mm] | [mm] | [mm/kN] | [mm] | [mm] |
| M8 – M12 / IG-M6 – M10 | all | 0,13 | 0,13*$N_{Rk}$ / 3,5 | 2*$\delta_{N0}$ | 0,55 | 0,55*$V_{Rk}$ / 3,5 | 1,5*$\delta_{V0}$ |
| M16 | all | | | | 0,31 | 0,31*$V_{Rk}$ / 3,5 | 1,5*$\delta_{V0}$ |

**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry**

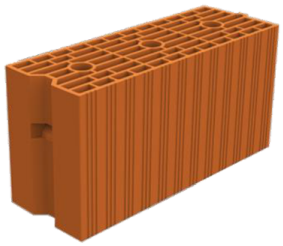
**Performances hollow Clay brick Calibric R+**
Group factors, characteristic Resistances and Displacements

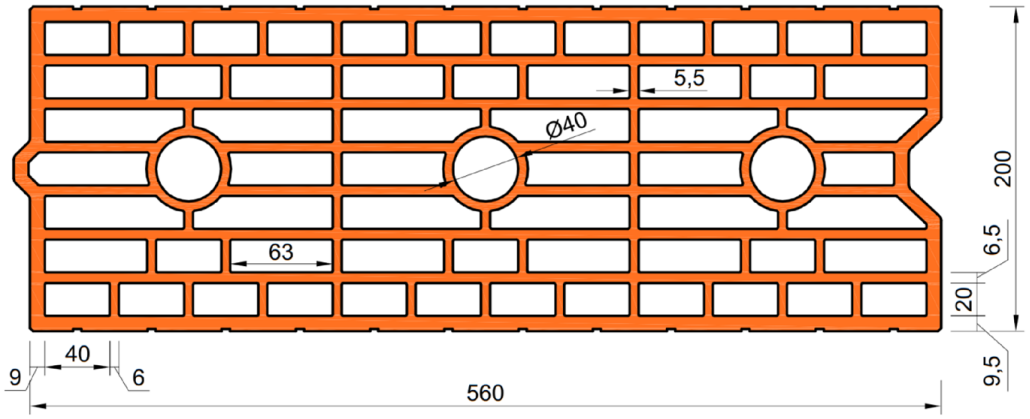
**Annex C 26**

## Brick type: Hollow Clay brick Urbanbric

### Table C85: Stone description

| | | |
|---|---|---|
| Brick type | | Hollow clay brick Urbanbric |
| Density | $\rho$ [kg/dm³] | ≥ 0,70 |
| Normalised mean compressive strenght | $f_b$ [N/mm²] | ≥ 12 |
| Conversion factor for lower compressive strengths | | $(f_b / 12)^{0,5} \leq 1,0$ |
| Code | | EN 771-1:2011+A1:2015 |
| Producer (Country) | | e.g. Imerys (FR) |
| Brick dimensions | [mm] | 560 x 200 x 274 |
| Drilling method | | Rotary drilling |

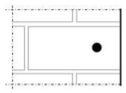
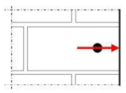
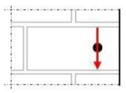





### Table C86: Installation parameter

| Anchor size | | [-] | M8 | M10 | M12 | M16 | IG-M6 | IG-M8 | IG-M10 |
|---|---|---|---|---|---|---|---|---|---|
| Installation torque | $T_{inst}$ | [Nm] | ≤ 2 | ≤ 2 | ≤ 2 | ≤ 2 | ≤ 2 | ≤ 2 | ≤ 2 |
| Char. Edge distance | $c_{cr}$ | [mm] | 120 (for shear loads perpendicular to the free edge: $c_{cr}$ = 500) | | | | | | |
| Minimum Edge Distance | $c_{min}$ | [mm] | 120 | | | | | | |
| Characteristic Spacing | $s_{cr,\,II}$ | [mm] | 560 | | | | | | |
| | $s_{cr,\,\perp}$ | [mm] | 275 | | | | | | |
| Minimum Spacing | $s_{min,\,II}$; $s_{min,\,\perp}$ | [mm] | 100 | | | | | | |

### Table C87: Reduction factors for single anchors at the edge

| Tension load | | | Shear load | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Perpendicular to the free edge | | | Parallel to the free edge | | |
| | with c ≥ | $\alpha_{edge,\,N}$ | | with c ≥ | $\alpha_{edge,\,V\perp}$ | | with c ≥ | $\alpha_{edge,\,V\,II}$ |
|  | 120 | 1,00 |  | 120 | 0,25 |  | 120 | 0,50 |
| | | | | 250 | 0,50 | | | |
| | 120 | 1,00 | | 500 | 1,00 | | 250 | 1,00 |

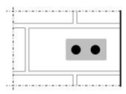
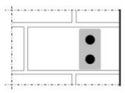
**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry**

**Performances hollow clay brick Urbanbric**
Description of the stone, Installation parameters, Reductionfactors

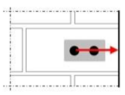
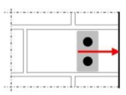
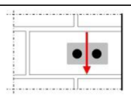
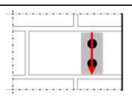
**Annex C 27**

## Brick type: Hollow Clay brick Urbanbric

### Table C88: Factors for anchor groups under tension load

| Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|
| | with c ≥ | with s ≥ | $\alpha_{g\,II,N}$ | | with c ≥ | with s ≥ | $\alpha_{g\,\perp,N}$ |
|  | 120 | 100 | 1,00 |  | 120 | 100 | 1,00 |
| | 185 | 100 | 1,90 | | 185 | 100 | 1,10 |
| | 120 | 560 | 2,00 | | 120 | 275 | 2,00 |

### Table C89: Factors for anchor groups under shear load

| | Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|---|
| Shear load perpendicular to the free edge |  | with c ≥ | with s ≥ | $\alpha_{g\,II,V\perp}$ |  | with c ≥ | with s ≥ | $\alpha_{g\,\perp,V\perp}$ |
| | | 120 | 100 | 1,00 | | 120 | 100 | 1,00 |
| | | 120 | 560 | 2,00 | | 120 | 275 | 2,00 |
| Shear load parallel to the free edge |  | with c ≥ | with s ≥ | $\alpha_{g\,II,V\,II}$ |  | with c ≥ | with s ≥ | $\alpha_{g\,\perp,V\,II}$ |
| | | 120 | 100 | 1,00 | | 120 | 100 | 1,00 |
| | | 120 | 560 | 2,00 | | 120 | 275 | 2,00 |

### Table C90: Characteristic values of tension and shear load resistances

| Anchor size | Perforated sleeve | Effective Anchorage depth | Characteristic Resistances with c ≥ $c_{cr}$ and s ≥ $s_{cr}$ | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Use condition | | | | | | | |
| | | | d/d | | | w/d<br>w/w | | | d/d<br>w/d<br>w/w | |
| | | | 40°C/24°C | 80°C/50°C | 120°C/72°C | 40°C/24°C | 80°C/50°C | 120°C/72°C | All temperature ranges | |
| | | $h_{ef}$ | $N_{Rk,b} = N_{Rk,p}$ [2)] | | | $N_{Rk,b} = N_{Rk,p}$ [2)] | | | $V_{Rk,b}$ [2)] | |
| | | [mm] | [kN] | | | | | | | |
| **Normalised mean compressive strength $f_b \geq 12$ N/mm² [1)]** | | | | | | | | | | |
| M8 | SH 12 | 80 | 1,2 | 1,2 | 0,9 | 1,2 | 1,2 | 0,9 | 4,5 | |
| M8 / M10/ IG-M6 | SH 16 | ≥ 85 | 1,2 | 1,2 | 0,9 | 1,2 | 1,2 | 0,9 | 4,5 | |
| | | 130 | 3,0 | 3,0 | 2,5 | 3,0 | 3,0 | 2,5 | 4,5 | |
| M12 / M16 IG-M8 / IG-M10 | SH 20 | ≥ 85 | 1,2 | 1,2 | 0,9 | 1,2 | 1,2 | 0,9 | 5,0 | |
| | | ≥ 130 | 3,0 | 3,0 | 2,5 | 3,0 | 3,0 | 2,5 | 5,0 | |

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C85. For stones with higher strengths, the shown values are valid without conversion.

2) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\,II} = V_{Rk,c\,\perp}$ according to Annex C 3

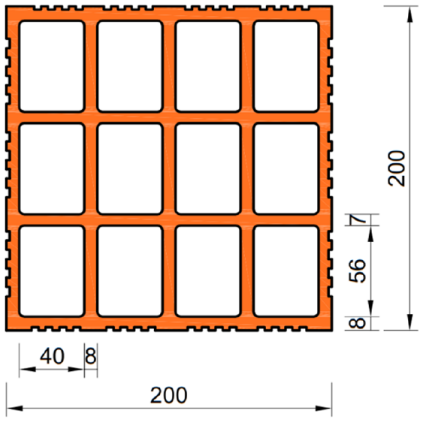
### Table C91: Displacements

| Anchor size | $h_{ef}$ | $\delta_N$ / N | $\delta_{N0}$ | $\delta_{N\infty}$ | $\delta_V$ / V | $\delta_{V0}$ | $\delta_{V\infty}$ |
|---|---|---|---|---|---|---|---|
| | [mm] | [mm/kN] | [mm] | [mm] | [mm/kN] | [mm] | [mm] |
| M8 – M12 / IG-M6 – M10 | all | 0,13 | 0,13*$N_{Rk}$ / 3,5 | 2*$\delta_{N0}$ | 0,55 | 0,55*$V_{Rk}$ / 3,5 | 1,5*$\delta_{V0}$ |
| M16 | all | | | | 0,31 | 0,31*$V_{Rk}$ / 3,5 | 1,5*$\delta_{V0}$ |

## Brick type: Hollow Clay brick Brique creuse C40

### Table C92: Stone description

| | | |
|---|---|---|
| Brick type | | Hollow clay brick<br>Brique creuse C40 |
| Density | $\rho$ [kg/dm³] | ≥ 0,70 |
| Normalised mean compressive strenght | $f_b$ [N/mm²] | ≥ 12 |
| Conversion factor for lower compressive strengths | | $(f_b / 12)^{0,5} \leq 1,0$ |
| Code | | EN 771-1:2011+A1:2015 |
| Producer (Country) | | e.g. Terreal (FR) |
| Brick dimensions | [mm] | 500 x 200 x 200 |
| Drilling method | | Rotary drilling |




### Table C93: Installation parameter

| Anchor size | | [-] | M8 | M10 | M12 | M16 | IG-M6 | IG-M8 | IG-M10 |
|---|---|---|---|---|---|---|---|---|---|
| Installation torque | $T_{inst}$ | [Nm] | ≤ 2 | ≤ 2 | ≤ 2 | ≤ 2 | ≤ 2 | ≤ 2 | ≤ 2 |
| Char. Edge distance | $c_{cr}$ | [mm] | 120 (for shear loads perpendicular to the free edge: $c_{cr}$ = 500) | | | | | | |
| Minimum Edge Distance | $c_{min}$ | [mm] | 120 | | | | | | |
| Characteristic Spacing | $s_{cr,\parallel}$ | [mm] | 500 | | | | | | |
| | $s_{cr,\perp}$ | [mm] | 200 | | | | | | |
| Minimum Spacing | $s_{min,\parallel}$; $s_{min,\perp}$ | [mm] | 200 | | | | | | |

### Table C94: Reduction factors for single anchors at the edge

| Tension load | | | Shear load | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Perpendicular to the free edge | | | Parallel to the free edge | | |
| | with c ≥ | $\alpha_{edge,N}$ | | with c ≥ | $\alpha_{edge,V\perp}$ | | with c ≥ | $\alpha_{edge,V\parallel}$ |
| | 120 | 1,00 | | 120 | 0,83 | | 120 | 1,00 |
| | 120 | 1,00 | | 500 | 1,00 | | 250 | 1,00 |

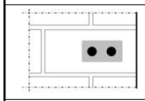
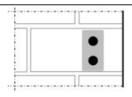
**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry**

**Performances hollow clay brick Brique Creuse C40**
Description of the stone, Installation parameters, Reductionfactors

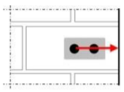
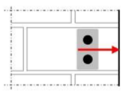
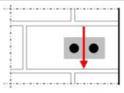
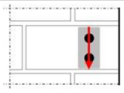
**Annex C 29**

## Brick type: Hollow Clay brick Brique creuse C40

### Table C95: Factors for anchor groups under tension load

| Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|
|  | with c ≥ | with s ≥ | $\alpha_{g\ II,\ N}$ |  | with c ≥ | with s ≥ | $\alpha_{g\ \perp,\ N}$ |
| | 120 | 500 | 2,00 | | 120 | 200 | 2,00 |

### Table C96: Factors for anchor groups under shear load

| | Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|---|
| Shear load perpendicular to the free edge |  | with c ≥ | with s ≥ | $\alpha_{g\ II,V\perp}$ |  | with c ≥ | with s ≥ | $\alpha_{g\ \perp,V\perp}$ |
| | | 120 | 500 | 2,00 | | 120 | 200 | 2,00 |
| Shear load parallel to the free edge |  | with c ≥ | with s ≥ | $\alpha_{g\ II,V\ II}$ |  | with c ≥ | with s ≥ | $\alpha_{g\ \perp,V\ II}$ |
| | | 120 | 500 | 2,00 | | 120 | 200 | 2,00 |

### Table C97: Characteristic values of tension and shear load resistances

| Anchor size | Perforated sleeve | Effective Anchorage depth | Characteristic Resistances with c ≥ $c_{cr}$ and s ≥ $s_{cr}$ | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Use condition | | | | | | |
| | | | d/d | | | w/d w/w | | | d/d w/d w/w |
| | | | 40°C/24°C | 80°C/50°C | 120°C/72°C | 40°C/24°C | 80°C/50°C | 120°C/72°C | All temperature ranges |
| | | $h_{ef}$ | $N_{Rk,b} = N_{Rk,p}$ [2)] | | | $N_{Rk,b} = N_{Rk,p}$ [2)] | | | $V_{Rk,b}$ [2)] |
| | | [mm] | [kN] | | | | | | |
| **Normalised mean compressive strength $f_b \geq 12$ N/mm² [1)]** | | | | | | | | | |
| M8 | SH 12 | 80 | 1,2 | 1,2 | 0,9 | 1,2 | 1,2 | 0,9 | 1,5 |
| M8 / M10/ IG-M6 | SH 16 | ≥ 85 | | | | | | | |
| M12 / M16 / IG-M8 / IG-M10 | SH 20 | ≥ 85 | | | | | | | |

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C92. For stones with higher strengths, the shown values are valid without conversion.

2) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\ II} = V_{Rk,c\perp}$ according to Annex C 3

### Table C98: Displacements

| Anchor size | $h_{ef}$ | $\delta N$ / N | $\delta N0$ | $\delta N\infty$ | $\delta V$ / V | $\delta V0$ | $\delta V\infty$ |
|---|---|---|---|---|---|---|---|
| | [mm] | [mm/kN] | [mm] | [mm] | [mm/kN] | [mm] | [mm] |
| M8 – M12 / IG-M6 – M10 | all | 0,13 | 0,13*$N_{Rk}$ / 3,5 | 2*$\delta N0$ | 0,55 | 0,55*$V_{Rk}$ / 3,5 | 1,5*$\delta V0$ |
| M16 | all | | | | 0,31 | 0,31*$V_{Rk}$ / 3,5 | 1,5*$\delta V0$ |

**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry**

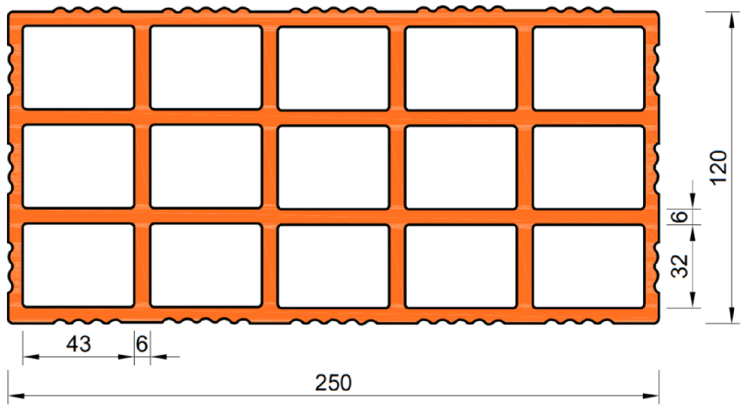
**Performances hollow clay brick Brique Creuse C40**
Group factors, characteristic Resistances and Displacements

**Annex C 30**

## Brick type: Hollow Clay brick Blocchi Leggeri

### Table C99: Stone description

| | | |
|---|---|---|
| Brick type | | Hollow clay brick Blocchi Leggeri |
| Density | $\rho$ [kg/dm³] | ≥ 0,60 |
| Normalised mean compressive strenght | $f_b$ [N/mm²] | ≥ 12 |
| Conversion factor for lower compressive strengths | | $(f_b / 12)^{0,5} \leq 1,0$ |
| Code | | EN 771-1:2011+A1:2015 |
| Producer (Country) | | e.g. Wienerberger (IT) |
| Brick dimensions | [mm] | 250 x 120 x 250 |
| Drilling method | | Rotary drilling |




### Table C100: Installation parameter

| Anchor size | | [-] | M8 | M10 | M12 | M16 | IG-M6 | IG-M8 | IG-M10 |
|---|---|---|---|---|---|---|---|---|---|
| Installation torque | $T_{inst}$ | [Nm] | ≤ 2 | ≤ 2 | ≤ 2 | ≤ 2 | ≤ 2 | ≤ 2 | ≤ 2 |
| Char. Edge distance | $c_{cr}$ | [mm] | 120 (for shear loads perpendicular to the free edge: $c_{cr}$ = 250) | | | | | | |
| Minimum Edge Distance | $c_{min}$ | [mm] | 60 | | | | | | |
| Characteristic Spacing | $s_{cr, II}$ | [mm] | 250 | | | | | | |
| | $s_{cr, \perp}$ | [mm] | 250 | | | | | | |
| Minimum Spacing | $s_{min, II}$; $s_{min, \perp}$ | [mm] | 100 | | | | | | |

### Table C101: Reduction factors for single anchors at the edge

| Tension load | | | Shear load | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Perpendicular to the free edge | | | Parallel to the free edge | | |
| | with c ≥ | $\alpha_{edge, N}$ | | with c ≥ | $\alpha_{edge, V \perp}$ | | with c ≥ | $\alpha_{edge, V II}$ |
| | 60 | 1,00 | | 60 | 0,40 | | 60 | 0,40 |
| | 120 | 1,00 | | 250 | 1,00 | | 120 | 1,00 |

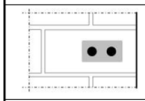
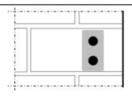
**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry**

**Performances hollow clay brick Blocchi Leggeri**
Description of the stone, Installation parameters, Reductionfactors

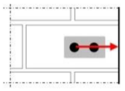
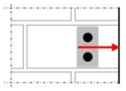
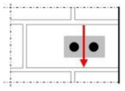
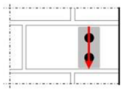
**Annex C 31**

## Brick type: Hollow Clay brick Blocchi Leggeri

### Table C102: Factors for anchor groups under tension load

| Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|
| | with c ≥ | with s ≥ | $\alpha_{g\ II,\ N}$ | | with c ≥ | with s ≥ | $\alpha_{g\ \perp,\ N}$ |
|  | 60 | 100 | 1,00 |  | 60 | 100 | 2,00 |
| | 120 | 250 | 2,00 | | 120 | 250 | 2,00 |

### Table C103: Factors for anchor groups under shear load

| | Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|---|
| Shear load perpendicular to the free edge |  | with c ≥ | with s ≥ | $\alpha_{g\ II,V\perp}$ |  | with c ≥ | with s ≥ | $\alpha_{g\ \perp,V\perp}$ |
| | | 60 | 100 | 0,40 | | 60 | 100 | 0,40 |
| | | 250 | 100 | 1,00 | | 250 | 100 | 1,00 |
| | | 250 | 250 | 2,00 | | 250 | 250 | 2,00 |
| Shear load parallel to the free edge |  | with c ≥ | with s ≥ | $\alpha_{g\ II,V\ II}$ |  | with c ≥ | with s ≥ | $\alpha_{g\ \perp,V\ II}$ |
| | | 60 | 100 | 0,40 | | 60 | 100 | 0,40 |
| | | 120 | 100 | 1,00 | | 120 | 100 | 1,00 |
| | | 120 | 250 | 2,00 | | 120 | 250 | 2,00 |

### Table C104: Characteristic values of tension and shear load resistances

| Anchor size | Perforated sleeve | Effective Anchorage depth | Characteristic Resistances with c ≥ $c_{cr}$ and s ≥ $s_{cr}$ | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Use condition | | | | | | |
| | | | d/d | | | w/d w/w | | | d/d w/d w/w |
| | | | 40°C/24°C | 80°C/50°C | 120°C/72°C | 40°C/24°C | 80°C/50°C | 120°C/72°C | All temperature ranges |
| | | $h_{ef}$ | $N_{Rk,b} = N_{Rk,p}$ 2) | | | $N_{Rk,b} = N_{Rk,p}$ 2) | | | $V_{Rk,b}$ 2) |
| | | [mm] | [kN] | | | | | | |
| **Normalised mean compressive strength $f_b \geq 12$ N/mm² 1)** | | | | | | | | | |
| M8 | SH 12 | 80 | 0,6 | 0,6 | 0,6 | 0,6 | 0,6 | 0,6 | 3,5 |
| M8 / M10/ IG-M6 | SH 16 | ≥ 85 | | | | | | | |
| M12 / M16 / IG-M8 / IG-M10 | SH 20 | ≥ 85 | | | | | | | |

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C99. For stones with higher strengths, the shown values are valid without conversion.

2) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\ II} = V_{Rk,c\perp}$ according to Annex C 3

### Table C105: Displacements

| Anchor size | $h_{ef}$ | $\delta_N$ / N | $\delta_{N0}$ | $\delta_{N\infty}$ | $\delta_V$ / V | $\delta_{V0}$ | $\delta_{V\infty}$ |
|---|---|---|---|---|---|---|---|
| | [mm] | [mm/kN] | [mm] | [mm] | [mm/kN] | [mm] | [mm] |
| M8 – M12 / IG-M6 – M10 | all | 0,13 | 0,13*$N_{Rk}$ / 3,5 | 2*$\delta_{N0}$ | 0,55 | 0,55*$V_{Rk}$ / 3,5 | 1,5*$\delta_{V0}$ |
| M16 | all | | | | 0,31 | 0,31*$V_{Rk}$ / 3,5 | 1,5*$\delta_{V0}$ |

**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry**

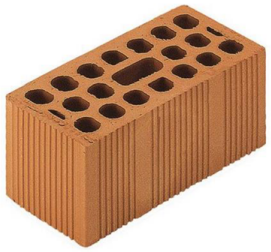
**Performances hollow clay brick Blocchi Leggeri**
Group factors, characteristic Resistances and Displacements

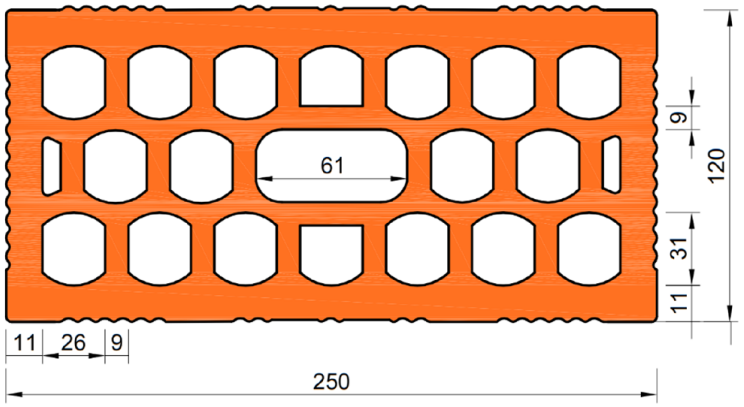
**Annex C 32**

## Brick type: Hollow Clay brick Doppio Uni

### Table C106: Stone description

| | | |
|---|---|---|
| Brick type | | Hollow clay brick Doppio Uni |
| Density | $\rho$ [kg/dm³] | ≥ 0,90 |
| Normalised mean compressive strenght | $f_b$ [N/mm²] | ≥ 28 |
| Conversion factor for lower compressive strengths | | $(f_b / 28)^{0,5} \leq 1,0$ |
| Code | | EN 771-1:2011+A1:2015 |
| Producer (Country) | | e.g. Wienerberger (IT) |
| Brick dimensions | [mm] | 250 x 120 x 120 |
| Drilling method | | Rotary drilling |






### Table C107: Installation parameter

| Anchor size | | [-] | M8 | M10 | M12 | M16 | IG-M6 | IG-M8 | IG-M10 |
|---|---|---|---|---|---|---|---|---|---|
| Installation torque | $T_{inst}$ | [Nm] | ≤ 2 | ≤ 2 | ≤ 2 | ≤ 2 | ≤ 2 | ≤ 2 | ≤ 2 |
| Char. Edge distance | $c_{cr}$ | [mm] | 120 (for shear loads perpendicular to the free edge: $c_{cr}$ = 250) | | | | | | |
| Minimum Edge Distance | $c_{min}$ | [mm] | 100 | | | | | | |
| Characteristic Spacing | $s_{cr, II}$ | [mm] | 250 | | | | | | |
| | $s_{cr, \perp}$ | [mm] | 120 | | | | | | |
| Minimum Spacing | $s_{min, II}$; $s_{min, \perp}$ | [mm] | 100 | | | | | | |

### Table C108: Reduction factors for single anchors at the edge

| Tension load | | | Shear load | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Perpendicular to the free edge | | | Parallel to the free edge | | |
| | with c ≥ | $\alpha_{edge, N}$ | | with c ≥ | $\alpha_{edge, V \perp}$ | | with c ≥ | $\alpha_{edge, V II}$ |
| | 100 | 1,00 | | 100 | 0,50 | | 100 | 1,00 |
| | 120 | 1,00 | | 250 | 1,00 | | 120 | 1,00 |

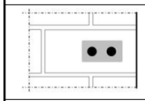
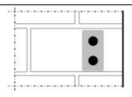
**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry**

**Performances hollow clay brick Doppio Uni**
Description of the stone, Installation parameters, Reductionfactors

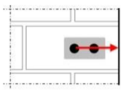
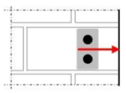
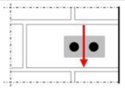
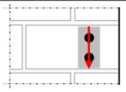
**Annex C 33**

## Brick type: Hollow Clay brick Doppio Uni

### Table C109: Factors for anchor groups under tension load

| Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|
|  | with c ≥ | with s ≥ | $\alpha_{g\ II,\ N}$ |  | with c ≥ | with s ≥ | $\alpha_{g\ \perp,\ N}$ |
| | 100 | 100 | 1,00 | | 100 | 120 | 2,00 |
| | 120 | 250 | 2,00 | | 120 | 120 | 2,00 |

### Table C110: Factors for anchor groups under shear load

| | Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|---|
| Shear load perpendicular to the free edge |  | with c ≥ | with s ≥ | $\alpha_{g\ II,V\perp}$ |  | with c ≥ | with s ≥ | $\alpha_{g\ \perp,V\perp}$ |
| | | 100 | 100 | 1,00 | | 100 | 100 | 1,00 |
| | | 250 | 250 | 2,00 | | 250 | 120 | 2,00 |
| Shear load parallel to the free edge |  | with c ≥ | with s ≥ | $\alpha_{g\ II,V\ II}$ |  | with c ≥ | with s ≥ | $\alpha_{g\ \perp,V\ II}$ |
| | | 100 | 100 | 1,00 | | 100 | 100 | 1,00 |
| | | 120 | 250 | 2,00 | | 120 | 120 | 2,00 |

### Table C111: Characteristic values of tension and shear load resistances

| Anchor size | Perforated sleeve | Effective Anchorage depth | Characteristic Resistances with c ≥ $c_{cr}$ and s ≥ $s_{cr}$ | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Use condition | | | | | | |
| | | | d/d | | | w/d w/w | | | d/d w/d w/w |
| | | | 40°C/24°C | 80°C/50°C | 120°C/72°C | 40°C/24°C | 80°C/50°C | 120°C/72°C | All temperature ranges |
| | | $h_{ef}$ | $N_{Rk,b} = N_{Rk,p}$ 2) | | | $N_{Rk,b} = N_{Rk,p}$ 2) | | | $V_{Rk,b}$ 2) |
| | | [mm] | [kN] | | | | | | |
| **Normalised mean compressive strength $f_b \geq 28$ N/mm² 1)** | | | | | | | | | |
| M8 | SH 12 | 80 | 1,2 | 1,2 | 0,9 | 1,2 | 1,2 | 0,9 | 2,5 |
| M8 / M10/ IG-M6 | SH 16 | ≥ 85 | | | | | | | |
| M12 / M16 / IG-M8 / IG-M10 | SH 20 | ≥ 85 | | | | | | | |

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C106. For stones with higher strengths, the shown values are valid without conversion.

2) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\ II} = V_{Rk,c\perp}$ according to Annex C 3

### Table C112: Displacements

| Anchor size | $h_{ef}$ | $\delta N$ / N | $\delta N0$ | $\delta N\infty$ | $\delta V$ / V | $\delta V0$ | $\delta V\infty$ |
|---|---|---|---|---|---|---|---|
| | [mm] | [mm/kN] | [mm] | [mm] | [mm/kN] | [mm] | [mm] |
| M8 – M12 / IG-M6 – M10 | all | 0,13 | 0,13*$N_{Rk}$ / 3,5 | 2*$\delta N0$ | 0,55 | 0,55*$V_{Rk}$ / 3,5 | 1,5*$\delta V0$ |
| M16 | all | | | | 0,31 | 0,31*$V_{Rk}$ / 3,5 | 1,5*$\delta V0$ |

**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry**

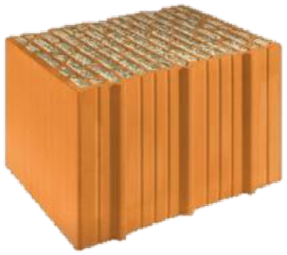
**Performances hollow clay brick Doppio Uni**
Group factors, characteristic Resistances and Displacements

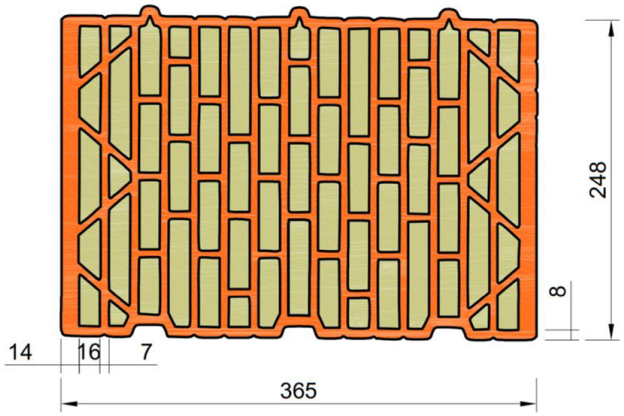
**Annex C 34**

## Brick type: Hollow clay brick Coriso WS07 with insulation

### Table C113: Stone description

| | | |
|---|---|---|
| Brick type | | Hollow clay brick Coriso WS07 |
| Insulationmaterial | | Rock wool |
| Density | $\rho$ [kg/dm³] | ≥ 0,55 |
| Normalised mean compressive strenght | $f_b$ [N/mm²] | ≥ 6 |
| Conversion factor for lower compressive strengths | | $(f_b / 6)^{0,5} \leq 1,0$ |
| Code | | EN 771-1:2011+A1:2015 |
| Producer (Country) | | e.g. Unipor (DE) |
| Brick dimensions | [mm] | 248 x 365 x 249 |
| Drilling method | | Rotary drilling |






### Table C114: Installation parameter

| Anchor size | | [-] | M8 | M10 | M12 | M16 | IG-M6 | IG-M8 | IG-M10 |
|---|---|---|---|---|---|---|---|---|---|
| Installation torque | $T_{inst}$ | [Nm] | ≤ 5 | ≤ 5 | ≤ 10 | ≤ 10 | ≤ 5 | ≤ 5 | ≤ 5 |
| Char. Edge distance | $c_{cr}$ | [mm] | 120 (for shear loads perpendicular to the free edge: $c_{cr}$ = 250) | | | | | | |
| Minimum Edge Distance | $c_{min}$ | [mm] | 50 | | | | | | |
| Characteristic Spacing | $s_{cr, II}$ | [mm] | 250 | | | | | | |
| | $s_{cr, \perp}$ | [mm] | 250 | | | | | | |
| Minimum Spacing | $s_{min, II}$; $s_{min, \perp}$ | [mm] | 50 | | | | | | |

### Table C115: Reduction factors for single anchors at the edge

| Tension load | | | Shear load | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Perpendicular to the free edge | | | Parallel to the free edge | | |
| | with c ≥ | $\alpha_{edge, N}$ | | with c ≥ | $\alpha_{edge, V \perp}$ | | with c ≥ | $\alpha_{edge, V II}$ |
| | 50 | 1,00 | | 50 | 0,30 | | 50 | 1,00 |
| | 120 | 1,00 | | 250 | 1,00 | | 120 | 1,00 |

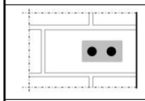
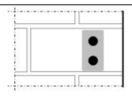
**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry**

**Performances hollow clay brick Coriso WS07 with insulation**
Description of the stone, Installation parameters, Reductionfactors

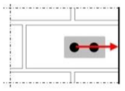
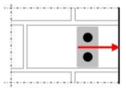
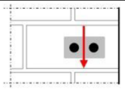
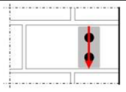
**Annex C 35**

## Brick type: Hollow clay brick Coriso WS07 with insulation

### Table C116: Factors for anchor groups under tension load

| Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|
| | with c ≥ | with s ≥ | $\alpha_{g\,II,N}$ | | with c ≥ | with s ≥ | $\alpha_{g\,\perp,N}$ |
|  | 50 | 50 | 1,50 |  | 50 | 50 | 1,00 |
| | 120 | 250 | 2,00 | | 120 | 250 | 2,00 |

### Table C117: Factors for anchor groups under shear load

| | Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|---|
| Shear load perpendicular to the free edge |  | with c ≥ | with s ≥ | $\alpha_{g\,II,V\perp}$ |  | with c ≥ | with s ≥ | $\alpha_{g\,\perp,V\perp}$ |
| | | 50 | 50 | 0,40 | | 50 | 50 | 0,40 |
| | | 250 | 50 | 1,00 | | 250 | 50 | 1,20 |
| | | 250 | 250 | 2,00 | | 250 | 250 | 2,00 |
| Shear load parallel to the free edge |  | with c ≥ | with s ≥ | $\alpha_{g\,II,V\,II}$ |  | with c ≥ | with s ≥ | $\alpha_{g\,\perp,V\,II}$ |
| | | 50 | 50 | 1,65 | | 50 | 50 | 1,00 |
| | | 120 | 250 | 2,00 | | 120 | 250 | 2,00 |

### Table C118: Characteristic values of tension and shear load resistances

| Anchor size | Perforated sleeve | Effective Anchorage depth | Characteristic Resistances with c ≥ $c_{cr}$ and s ≥ $s_{cr}$ | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Use condition | | | | | | |
| | | | d/d | | | w/d<br>w/w | | | d/d<br>w/d<br>w/w |
| | | | 40°C/24°C | 80°C/50°C | 120°C/72°C | 40°C/24°C | 80°C/50°C | 120°C/72°C | All temperature ranges |
| | | $h_{ef}$ | $N_{Rk,b} = N_{Rk,p}$ [2)] | | | $N_{Rk,b} = N_{Rk,p}$ [2)] | | | $V_{Rk,b}$ [2)] |
| | | [mm] | [kN] | | | | | | |
| **Normalised mean compressive strength $f_b \geq 6$ N/mm² [1)]** | | | | | | | | | |
| M8 | SH 12 | 80 | 1,5 | 1,5 | 1,5 | 1,5 | 1,5 | 1,5 | 5,0 |
| M8 / M10/ IG-M6 | SH 16 | ≥ 85 | | | | | | | |
| M12 / M16 / IG-M8 / IG-M10 | SH 20 | ≥ 85 | | | | | | | |

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C113. For stones with higher strengths, the shown values are valid without conversion.

2) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\,II} = V_{Rk,c\perp}$ according to Annex C 3

### Table C119: Displacements

| Anchor size | $h_{ef}$ | $\delta_N$ / N | $\delta_{N0}$ | $\delta_{N\infty}$ | $\delta_V$ / V | $\delta_{V0}$ | $\delta_{V\infty}$ |
|---|---|---|---|---|---|---|---|
| | [mm] | [mm/kN] | [mm] | [mm] | [mm/kN] | [mm] | [mm] |
| M8 – M12 / IG-M6 – M10 | all | 0,13 | 0,13*$N_{Rk}$ / 3,5 | 2*$\delta_{N0}$ | 0,55 | 0,55*$V_{Rk}$ / 3,5 | 1,5*$\delta_{V0}$ |
| M16 | all | | | | 0,31 | 0,31*$V_{Rk}$ / 3,5 | 1,5*$\delta_{V0}$ |

**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry**

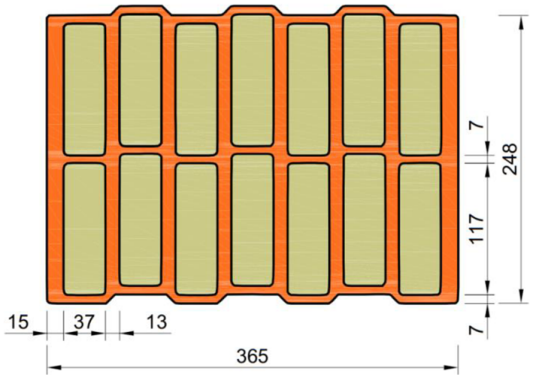
**Performances hollow Clay brick Coriso WS07 with insulation**
Group factors, characteristic Resistances and Displacements

**Annex C 36**

## Brick type: Hollow clay brick T7 MW with insulation

### Table C120: Stone description

| | | |
|---|---|---|
| Brick type | | Hollow clay brick T7 MW |
| Insulation material | | Rock wool |
| Density | $\rho$ [kg/dm³] | ≥ 0,59 |
| Normalised mean compressive strenght | $f_b$ [N/mm²] | ≥ 8 |
| Conversion factor for lower compressive strengths | | $(f_b / 8)^{0,5} \leq 1,0$ |
| Code | | EN 771-1:2011+A1:2015 |
| Producer (Country) | | e.g. Wienerberger (DE) |
| Brick dimensions | [mm] | 248 x 365 x 249 |
| Drilling method | | Rotary drilling |




### Table C121: Installation parameter

| Anchor size | | [-] | M8 | M10 | M12 | M16 | IG-M6 | IG-M8 | IG-M10 |
|---|---|---|---|---|---|---|---|---|---|
| Installation torque | $T_{inst}$ | [Nm] | ≤ 5 | ≤ 5 | ≤ 10 | ≤ 10 | ≤ 5 | ≤ 5 | ≤ 5 |
| Char. Edge distance (under fire conditions) | $c_{cr}$; ($c_{cr,fi}$) | [mm] | 120 (2 $h_{ef}$) (for shear loads perpendicular to the free edge: $c_{cr}$ = 250) | | | | | | |
| Minimum Edge Distance | $c_{min}$ | [mm] | 50 | | | | | | |
| Characteristic Spacing (under fire conditions) | $s_{cr,\,II}$; ($s_{cr,fi,\,II}$) | [mm] | 250 (4 $h_{ef}$) | | | | | | |
| | $s_{cr,\,\perp}$; ($s_{cr,fi,\,\perp}$) | [mm] | 250 (4 $h_{ef}$) | | | | | | |
| Minimum Spacing | $s_{min,\,II}$; $s_{min,\,\perp}$ | [mm] | 50 | | | | | | |

### Table C122: Reduction factors for single anchors at the edge

| Tension load | | | Shear load | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Perpendicular to the free edge | | | Parallel to the free edge | | |
| | with c ≥ | $\alpha_{edge,\,N}$ | | with c ≥ | $\alpha_{edge,\,V\perp}$ | | with c ≥ | $\alpha_{edge,\,V\,II}$ |
| | 50 | 1,00 | | 50 | 0,35 | | 50 | 1,00 |
| | 120 | 1,00 | | 250 | 1,00 | | 120 | 1,00 |

### Table C123: Factors for anchor groups under tension load

| Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|
| | with c ≥ | with s ≥ | $\alpha_{g\,II,\,N}$ | | with c ≥ | with s ≥ | $\alpha_{g\,\perp,\,N}$ |
| | 50 | 50 | 1,40 | | 50 | 50 | 1,15 |
| | 120 | 250 | 2,00 | | 120 | 250 | 2,00 |

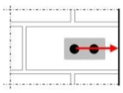
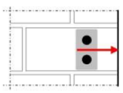
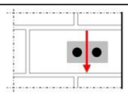
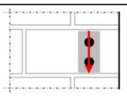
**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry**

**Performances hollow clay brick T7 MW with insulation**
Description of the stone, Installation parameters, Reductionfactors

**Annex C 37**

## Brick type: Hollow clay brick T7 MW with insulation

### Table C124: Factors for anchor groups under shear load

| | Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|---|
| Shear load perpendicular to the free edge |  | with c ≥ | with s ≥ | $\alpha_{g\,II,V\perp}$ |  | with c ≥ | with s ≥ | $\alpha_{g\perp,V\perp}$ |
| | | 50 | 50 | 0,60 | | 50 | 50 | 0,40 |
| | | 250 | 50 | 1,55 | | 250 | 50 | 1,00 |
| | | 250 | 250 | 2,00 | | 250 | 250 | 2,00 |
| Shear load parallel to the free edge |  | with c ≥ | with s ≥ | $\alpha_{g\,II,V\,II}$ |  | with c ≥ | with s ≥ | $\alpha_{g\perp,V\,II}$ |
| | | 50 | 50 | 2,00 | | 50 | 50 | 1,20 |
| | | 120 | 250 | 2,00 | | 120 | 250 | 2,00 |

### Table C125: Characteristic values of tension and shear load resistances

| Anchor size | Perforated sleeve | Effective Anchorage depth | Characteristic Resistances with c ≥ $c_{cr}$ and s ≥ $s_{cr}$ | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Use condition | | | | | | |
| | | | d/d | | | w/d w/w | | | d/d w/d w/w |
| | | | 40°C/24°C | 80°C/50°C | 120°C/72°C | 40°C/24°C | 80°C/50°C | 120°C/72°C | All temperature ranges |
| | | $h_{ef}$ | $N_{Rk,b} = N_{Rk,p}$ [2)] | | | $N_{Rk,b} = N_{Rk,p}$ [2)] | | | $V_{Rk,b}$ [2)] |
| | | [mm] | [kN] | | | | | | |
| **Normalised mean compressive strength $f_b \geq 8$ N/mm² 1)** | | | | | | | | | |
| M8 | SH 12 | 80 | 2,0 | 2,0 | 1,5 | 2,0 | 2,0 | 1,5 | 3,0 |
| M8 / M10/ IG-M6 | SH 16 | ≥ 85 | | | | | | | |
| M12 / IG-M8 | SH 20 | ≥ 85 | | | | | | | |
| M16 / IG-M10 | SH 20 | ≥ 85 | | | | | | | 4,5 |

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C120. For stones with higher strengths, the shown values are valid without conversion.

2) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\,II} = V_{Rk,c\perp}$ according to Annex C 3

### Table C126: Displacements

| Anchor size | $h_{ef}$ | $\delta N$ / N | $\delta N0$ | $\delta N\infty$ | $\delta V$ / V | $\delta V0$ | $\delta V\infty$ |
|---|---|---|---|---|---|---|---|
| | [mm] | [mm/kN] | [mm] | [mm] | [mm/kN] | [mm] | [mm] |
| M8 – M12 / IG-M6 – M10 | all | 0,13 | 0,13*$N_{Rk}$ / 3,5 | 2*$\delta N0$ | 0,55 | 0,55*$V_{Rk}$ / 3,5 | 1,5*$\delta V0$ |
| M16 | all | | | | 0,31 | 0,31*$V_{Rk}$ / 3,5 | 1,5*$\delta V0$ |

### Table C127: Characteristic values of tension and shear load resistances under fire exposure

| Anchor size | Perforated sleeve | Effecitve Anchorage depth | Characteristic Resistances $N_{Rk,b,fi} = N_{Rk,p,fi} = V_{Rk,b,fi}$ | | | |
|---|---|---|---|---|---|---|
| | | $h_{ef}$ | R30 | R60 | R90 | R120 |
| | | [mm] | [kN] | | | |
| M8 / M10 /IG-M6 | SH 16 | 130 | 0,64 | 0,37 | 0,11 | -1) |
| M12 / M16 / IG-M8 IG-M10 | SH 20 | ≥ 130 | | | | |

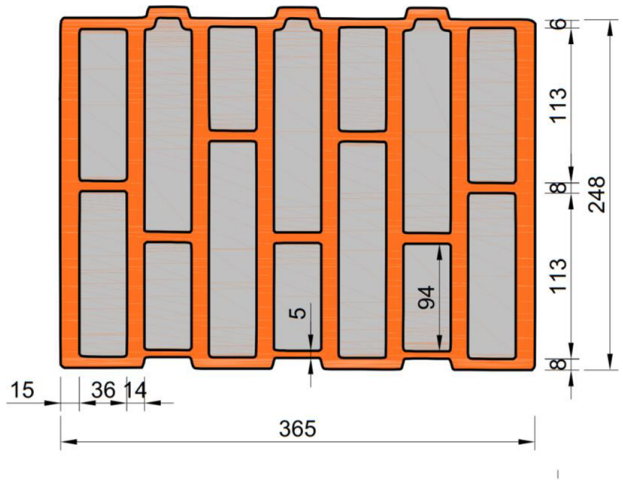
1) no performance assessed

| | |
|---|---|
| **Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry** | **Annex C 38** |
| **Performances hollow clay brick T7 MW with insulation**<br>Group factors, characteristic Resistances and Displacements | |

## Brick type: Hollow clay brick T8 P with insulation

### Table C128: Stone description

| | | |
|---|---|---|
| Brick type | | Hollow clay brick T8 P |
| Insulation material | | Perlite |
| Density | $\rho$ [kg/dm³] | ≥ 0,56 |
| Normalised mean compressive strenght | $f_b$ [N/mm²] | ≥ 6 |
| Conversion factor for lower compressive strengths | | $(f_b / 6)^{0,5} \leq 1,0$ |
| Code | | EN 771-1:2011+A1:2015 |
| Producer (Country) | | e.g. Wienerberger (DE) |
| Brick dimensions | [mm] | 248 x 365 x 249 |
| Drilling method | | Rotary drilling |




### Table C129: Installation parameter

| Anchor size | | [-] | M8 | M10 | M12 | M16 | IG-M6 | IG-M8 | IG-M10 |
|---|---|---|---|---|---|---|---|---|---|
| Installation torque | $T_{inst}$ | [Nm] | ≤ 4 | ≤ 4 | ≤ 10 | ≤ 10 | ≤ 4 | ≤ 4 | ≤ 4 |
| Char. Edge distance | $c_{cr}$ | [mm] | 120 (for shear loads perpendicular to the free edge: $c_{cr}$ = 250) | | | | | | |
| Minimum Edge Distance | $c_{min}$ | [mm] | 50 | | | | | | |
| Characteristic Spacing | $s_{cr, II}$ | [mm] | 250 | | | | | | |
| | $s_{cr, \perp}$ | [mm] | 250 | | | | | | |
| Minimum Spacing | $s_{min, II}$; $s_{min, \perp}$ | [mm] | 50 | | | | | | |

### Table C130: Reduction factors for single anchors at the edge

| Tension load | | | Shear load | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Perpendicular to the free edge | | | Parallel to the free edge | | |
| | with c ≥ | $\alpha_{edge, N}$ | | with c ≥ | $\alpha_{edge, V \perp}$ | | with c ≥ | $\alpha_{edge, V II}$ |
| | 50 | 1,00 | | 50 | 0,25 | | 50 | 1,00 |
| | 120 | 1,00 | | 250 | 1,00 | | 120 | 1,00 |

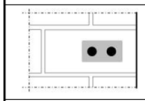
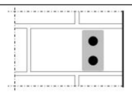
**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry**

**Performances hollow clay brick T8 P with insulation**
Description of the stone, Installation parameters, Reductionfactors

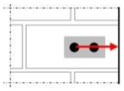
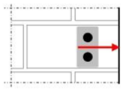
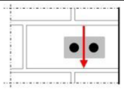
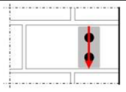
**Annex C 39**

## Brick type: Hollow clay brick T8 P with insulation

### Table C131: Factors for anchor groups under tension load

| Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|
| | with c ≥ | with s ≥ | $\alpha_{g\,II,\,N}$ | | with c ≥ | with s ≥ | $\alpha_{g\,\perp,\,N}$ |
|  | 50 | 50 | 1,30 |  | 50 | 50 | 1,10 |
| | 120 | 250 | 2,00 | | 120 | 250 | 2,00 |

### Table C132: Factors for anchor groups under shear load

| | Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|---|
| Shear load perpendicular to the free edge |  | with c ≥ | with s ≥ | $\alpha_{g\,II,V\perp}$ |  | with c ≥ | with s ≥ | $\alpha_{g\,\perp,V\perp}$ |
| | | 50 | 50 | 0,40 | | 50 | 50 | 0,30 |
| | | 250 | 50 | 1,35 | | 250 | 50 | 1,20 |
| | | 250 | 250 | 2,00 | | 250 | 250 | 2,00 |
| Shear load parallel to the free edge |  | with c ≥ | with s ≥ | $\alpha_{g\,II,V\,II}$ |  | with c ≥ | with s ≥ | $\alpha_{g\,\perp,V\,II}$ |
| | | 50 | 50 | 1,70 | | 50 | 50 | 1,00 |
| | | 120 | 250 | 2,00 | | 120 | 250 | 2,00 |

### Table C133: Characteristic values of tension and shear load resistances

| Anchor size | Perforated sleeve | Effective Anchorage depth | Characteristic Resistances with c ≥ $c_{cr}$ and s ≥ $s_{cr}$ | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Use condition | | | | | | |
| | | | d/d | | | w/d w/w | | | d/d w/d w/w |
| | | | 40°C/24°C | 80°C/50°C | 120°C/72°C | 40°C/24°C | 80°C/50°C | 120°C/72°C | All temperature ranges |
| | | $h_{ef}$ | $N_{Rk,b} = N_{Rk,p}$ 2) | | | $N_{Rk,b} = N_{Rk,p}$ 2) | | | $V_{Rk,b}$ 2) |
| | | [mm] | [kN] | | | | | | |
| **Normalised mean compressive strength $f_b \geq 6$ N/mm² 1)** | | | | | | | | | |
| M8 | SH 12 | 80 | 1,5 | 1,5 | 1,5 | 1,5 | 1,5 | 1,5 | 4,5 |
| M8 / M10/ IG-M6 | SH 16 | ≥ 85 | | | | | | | |
| M12 / IG-M8 | SH 20 | ≥ 85 | | | | | | | |
| M16 / IG-M10 | SH 20 | ≥ 85 | 2,5 | 2,5 | 2,0 | 2,5 | 2,5 | 2,0 | 7,0 |

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C128. For stones with higher strengths, the shown values are valid without conversion.

2) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\,II} = V_{Rk,c\,\perp}$ according to Annex C 3

### Table C134: Displacements

| Anchor size | $h_{ef}$ | $\delta_N$ / N | $\delta_{N0}$ | $\delta_{N\infty}$ | $\delta_V$ / V | $\delta_{V0}$ | $\delta_{V\infty}$ |
|---|---|---|---|---|---|---|---|
| | [mm] | [mm/kN] | [mm] | [mm] | [mm/kN] | [mm] | [mm] |
| M8 – M12 / IG-M6 – M10 | all | 0,13 | 0,13*$N_{Rk}$ / 3,5 | 2*$\delta_{N0}$ | 0,55 | 0,55*$V_{Rk}$ / 3,5 | 1,5*$\delta_{V0}$ |
| M16 | all | | | | 0,31 | 0,31*$V_{Rk}$ / 3,5 | 1,5*$\delta_{V0}$ |

**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry**

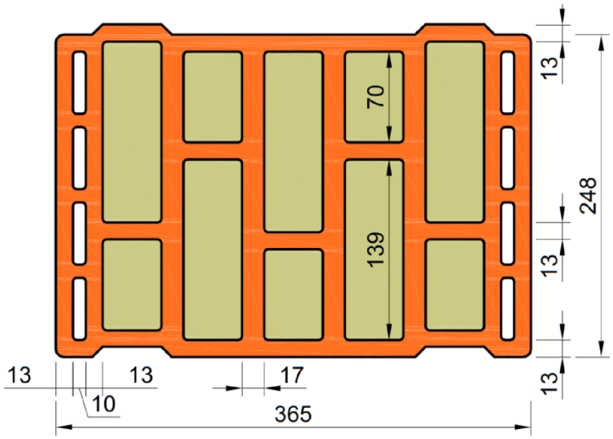
**Performances hollow clay brick T8 P with insulation**
Group factors, characteristic Resistances and Displacements

**Annex C 40**

## Brick type: Hollow clay brick Thermoplan MZ90-G with insulation

### Table C135: Stone description

| | | |
|---|---|---|
| Brick type | | Hollow clay brick Thermoplan MZ90-G |
| Insulation material | | Rock wool |
| Density | $\rho$ [kg/dm³] | ≥ 0,68 |
| Normalised mean compressive strenght | $f_b$ [N/mm²] | ≥ 12 |
| Conversion factor for lower compressive strengths | | $(f_b / 12)^{0,5} \leq 1,0$ |
| Code | | EN 771-1:2011+A1:2015 |
| Producer (Country) | | e.g. Mein Ziegelhaus (DE) |
| Brick dimensions | [mm] | 248 x 365 x 249 |
| Drilling method | | Rotary drilling |




### Table C136: Installation parameter

| Anchor size | | [-] | M8 | M10 | M12 | M16 | IG-M6 | IG-M8 | IG-M10 |
|---|---|---|---|---|---|---|---|---|---|
| Installation torque | $T_{inst}$ | [Nm] | ≤ 4 | ≤ 4 | ≤ 10 | ≤ 10 | ≤ 4 | ≤ 4 | ≤ 4 |
| Char. Edge distance | $c_{cr}$ | [mm] | 120 (for shear loads perpendicular to the free edge: $c_{cr}$ = 250) | | | | | | |
| Minimum Edge Distance | $c_{min}$ | [mm] | 50 | | | | | | |
| Characteristic Spacing | $s_{cr,\,II}$ | [mm] | 250 | | | | | | |
| | $s_{cr,\,\perp}$ | [mm] | 250 | | | | | | |
| Minimum Spacing | $s_{min,\,II}$; $s_{min,\,\perp}$ | [mm] | 50 | | | | | | |

### Table C137: Reduction factors for single anchors at the edge

| Tension load | | | Shear load | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Perpendicular to the free edge | | | Parallel to the free edge | | |
| | with c ≥ | $\alpha_{edge,\,N}$ | | with c ≥ | $\alpha_{edge,\,V\perp}$ | | with c ≥ | $\alpha_{edge,\,V\,II}$ |
| | 50 | 1,00 | | 50 | 0,25 | | 50 | 1,00 |
| | 120 | 1,00 | | 250 | 1,00 | | 120 | 1,00 |

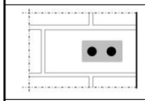
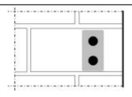
**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry**

**Performances hollow clay brick Thermoplan MZ90-G with insulation**
Description of the stone, Installation parameters, Reductionfactors

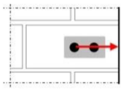
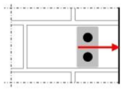
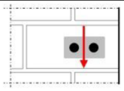
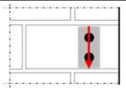
**Annex C 41**

## Brick type: Hollow clay brick Thermoplan MZ90-G with insulation

### Table C138: Factors for anchor groups under tension load

| Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|
|  | with c ≥ | with s ≥ | $\alpha_{g\,II,\,N}$ |  | with c ≥ | with s ≥ | $\alpha_{g\,\perp,\,N}$ |
| | 50 | 50 | 1,00 | | 50 | 50 | 1,00 |
| | 120 | 250 | 2,00 | | 120 | 250 | 2,00 |

### Table C139: Factors for anchor groups under shear load

| | Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|---|
| Shear load perpendicular to the free edge |  | with c ≥ | with s ≥ | $\alpha_{g\,II,V\perp}$ |  | with c ≥ | with s ≥ | $\alpha_{g\,\perp,V\perp}$ |
| | | 50 | 50 | 0,75 | | 50 | 50 | 0,50 |
| | | 250 | 50 | 2,00 | | 250 | 50 | 1,70 |
| | | 250 | 250 | 2,00 | | 250 | 250 | 2,00 |
| Shear load parallel to the free edge |  | with c ≥ | with s ≥ | $\alpha_{g\,II,V\,II}$ |  | with c ≥ | with s ≥ | $\alpha_{g\,\perp,V\,II}$ |
| | | 50 | 50 | 1,65 | | 50 | 50 | 1,15 |
| | | 120 | 250 | 2,00 | | 120 | 250 | 2,00 |

### Table C140: Characteristic values of tension and shear load resistances

| Anchor size | Perforated sleeve | Effective Anchorage depth | Characteristic Resistances with c ≥ $c_{cr}$ and s ≥ $s_{cr}$ | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Use condition | | | | | | |
| | | | d/d | | | w/d w/w | | | d/d w/d w/w |
| | | | 40°C/24°C | 80°C/50°C | 120°C/72°C | 40°C/24°C | 80°C/50°C | 120°C/72°C | All temperature ranges |
| | | $h_{ef}$ | $N_{Rk,b} = N_{Rk,p}$ 2) | | | $N_{Rk,b} = N_{Rk,p}$ 2) | | | $V_{Rk,b}$ 2) |
| | | [mm] | [kN] | | | | | | |
| **Normalised mean compressive strength $f_b \geq 12$ N/mm² 1)** | | | | | | | | | |
| M8 | SH 12 | 80 | 3,0 | 3,0 | 2,5 | 3,0 | 3,0 | 2,5 | 4,0 |
| M8 / M10/ IG-M6 | SH 16 | ≥ 85 | | | | | | | |
| M12 / IG-M8 | SH 20 | ≥ 85 | | | | | | | |
| M16 / IG-M10 | SH 20 | ≥ 85 | 3,5 | 3,5 | 3,0 | 3,5 | 3,5 | 3,0 | 7,5 |

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C135. For stones with higher strengths, the shown values are valid without conversion.

2) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\,II} = V_{Rk,c\,\perp}$ according to Annex C 3

### Table C141: Displacements

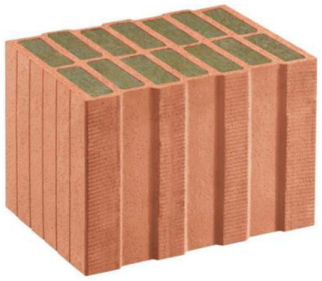
| Anchor size | $h_{ef}$ | $\delta_N$ / N | $\delta_{N0}$ | $\delta_{N\infty}$ | $\delta_V$ / V | $\delta_{V0}$ | $\delta_{V\infty}$ |
|---|---|---|---|---|---|---|---|
| | [mm] | [mm/kN] | [mm] | [mm] | [mm/kN] | [mm] | [mm] |
| M8 – M12 / IG-M6 – M10 | all | 0,13 | 0,13*$N_{Rk}$ / 3,5 | 2*$\delta_{N0}$ | 0,55 | 0,55*$V_{Rk}$ / 3,5 | 1,5*$\delta_{V0}$ |
| M16 | all | | | | 0,31 | 0,31*$V_{Rk}$ / 3,5 | 1,5*$\delta_{V0}$ |

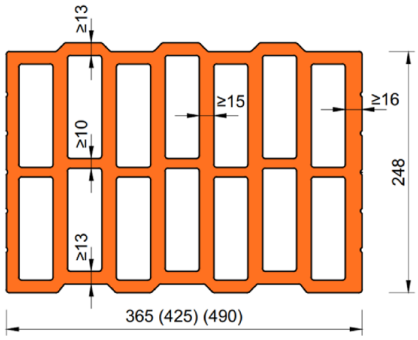
| | |
|---|---|
| **Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry** | **Annex C 42** |
| **Performances hollow clay brick Thermoplan MZ90-G with insulation**<br>Group factors, characteristic Resistances and Displacements | |

## Brick type: Hollow clay brick Poroton FZ7,5 with insulation

### Table C142: Stone description

| | | |
|---|---|---|
| Brick type | | Hollow clay brick Poroton FZ7,5 |
| Insulation material | | Rock wool |
| Density | $\rho$ [kg/dm³] | ≥ 0,70 |
| Normalised mean compressive strenght | $f_b$ [N/mm²] | ≥ 8 |
| Conversion factor for lower compressive strengths | | $(f_b / 8)^{0,5} \leq 1,0$ |
| Code | | EN 771-1:2011+A1:2015 |
| Producer (Country) | | e.g. Schlagmann (DE) |
| Brick dimensions | [mm] | 248 x 365 x 249 |
| Drilling method | | Rotary drilling |






### Table C143: Installation parameter

| Anchor size | | [-] | M8 | M10 | M12 | M16 | IG-M6 | IG-M8 | IG-M10 |
|---|---|---|---|---|---|---|---|---|---|
| Installation torque | $T_{inst}$ | [Nm] | ≤ 5 | ≤ 5 | ≤ 10 | ≤ 10 | ≤ 5 | ≤ 5 | ≤ 5 |
| Char. Edge distance (under fire conditions) | $c_{cr}$; ($c_{cr,fi}$) | [mm] | 120 (2 $h_{ef}$) (for shear loads perpendicular to the free edge: $c_{cr}$ = 250) | | | | | | |
| Minimum Edge Distance | $c_{min}$ | [mm] | 50 | | | | | | |
| Characteristic Spacing (under fire conditions) | $s_{cr,\,II}$; ($s_{cr,fi,\,II}$) | [mm] | 250 (4 $h_{ef}$) | | | | | | |
| | $s_{cr,\,\perp}$; ($s_{cr,fi,\,\perp}$) | [mm] | 250 (4 $h_{ef}$) | | | | | | |
| Minimum Spacing | $s_{min,\,II}$; $s_{min,\,\perp}$ | [mm] | 50 | | | | | | |

### Table C144: Reduction factors for single anchors at the edge

| Tension load | | | Shear load | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Perpendicular to the free edge | | | Parallel to the free edge | | |
| | with c ≥ | $\alpha_{edge,\,N}$ | | with c ≥ | $\alpha_{edge,\,V\perp}$ | | with c ≥ | $\alpha_{edge,\,V\,II}$ |
| | 50 | 1,00 | | 50 | 0,35 | | 50 | 1,00 |
| | 120 | 1,00 | | 250 | 1,00 | | 120 | 1,00 |

### Table C145: Factors for anchor groups under tension load

| Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|
| | with c ≥ | with s ≥ | $\alpha_{g\,II,\,N}$ | | with c ≥ | with s ≥ | $\alpha_{g\,\perp,\,N}$ |
| | 50 | 50 | 1,40 | | 50 | 50 | 1,15 |
| | 120 | 250 | 2,00 | | 120 | 250 | 2,00 |

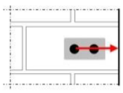
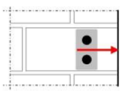
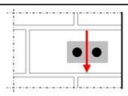
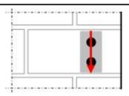
**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry**

**Performances hollow clay brick Poroton FZ7,5 with insulation**
Description of the stone, Installation parameters, Reductionfactors

**Annex C 43**

## Brick type: Hollow clay brick Poroton FZ7,5 with insulation

### Table C146: Factors for anchor groups under shear load

| | Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|---|
| Shear load perpendicular to the free edge |  | with c ≥ | with s ≥ | $\alpha_{g\,II,V\perp}$ |  | with c ≥ | with s ≥ | $\alpha_{g\perp,V\perp}$ |
| | | 50 | 50 | 0,60 | | 50 | 50 | 0,40 |
| | | 250 | 50 | 1,55 | | 250 | 50 | 1,00 |
| | | 250 | 250 | 2,00 | | 250 | 250 | 2,00 |
| Shear load parallel to the free edge |  | with c ≥ | with s ≥ | $\alpha_{g\,II,V\,II}$ |  | with c ≥ | with s ≥ | $\alpha_{g\perp,V\,II}$ |
| | | 50 | 50 | 2,00 | | 50 | 50 | 1,20 |
| | | 120 | 250 | 2,00 | | 120 | 250 | 2,00 |

### Table C147: Characteristic values of tension and shear load resistances

| Anchor size | Perforated sleeve | Effective Anchorage depth | Characteristic Resistances with c ≥ $c_{cr}$ and s ≥ $s_{cr}$ | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Use condition | | | | | | |
| | | | d/d | | | w/d w/w | | | d/d w/d w/w |
| | | | 40°C/24°C | 80°C/50°C | 120°C/72°C | 40°C/24°C | 80°C/50°C | 120°C/72°C | All temperature ranges |
| | | $h_{ef}$ | $N_{Rk,b} = N_{Rk,p}$ [2)] | | | $N_{Rk,b} = N_{Rk,p}$ [2)] | | | $V_{Rk,b}$ [2)] |
| | | [mm] | [kN] | | | | | | |
| **Normalised mean compressive strength $f_b \geq 8$ N/mm² 1)** | | | | | | | | | |
| M8 | SH 12 | 80 | 2,0 | 2,0 | 1,5 | 2,0 | 2,0 | 1,5 | 3,0 |
| M8 / M10/ IG-M6 | SH 16 | ≥ 85 | | | | | | | |
| M12 / IG-M8 | SH 20 | ≥ 85 | | | | | | | |
| M16 / IG-M10 | SH 20 | ≥ 85 | | | | | | | 4,5 |

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C142. For stones with higher strengths, the shown values are valid without conversion.

2) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\,II} = V_{Rk,c\perp}$ according to Annex C 3

### Table C148: Displacements

| Anchor size | $h_{ef}$ | $\delta N$ / N | $\delta N_0$ | $\delta N_\infty$ | $\delta V$ / V | $\delta V_0$ | $\delta V_\infty$ |
|---|---|---|---|---|---|---|---|
| | [mm] | [mm/kN] | [mm] | [mm] | [mm/kN] | [mm] | [mm] |
| M8 – M12 / IG-M6 – M10 | all | 0,13 | 0,13*$N_{Rk}$ / 3,5 | 2*$\delta N_0$ | 0,55 | 0,55*$V_{Rk}$ / 3,5 | 1,5*$\delta V_0$ |
| M16 | all | | | | 0,31 | 0,31*$V_{Rk}$ / 3,5 | 1,5*$\delta V_0$ |

### Table C149: Characteristic values of tension and shear load resistances under fire exposure

| Anchor size | Perforated sleeve | Effecitve Anchorage depth | Characteristic Resistances $N_{Rk,b,fi} = N_{Rk,p,fi} = V_{Rk,b,fi}$ | | | |
|---|---|---|---|---|---|---|
| | | $h_{ef}$ | R30 | R60 | R90 | R120 |
| | | [mm] | [kN] | | | |
| M8 / M10 /IG-M6 | SH 16 | 130 | 0,64 | 0,37 | 0,11 | -1) |
| M12 / M16 / IG-M8 IG-M10 | SH 20 | ≥ 130 | | | | |

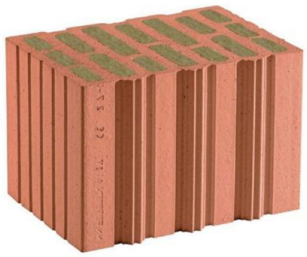
1) no performance assessed

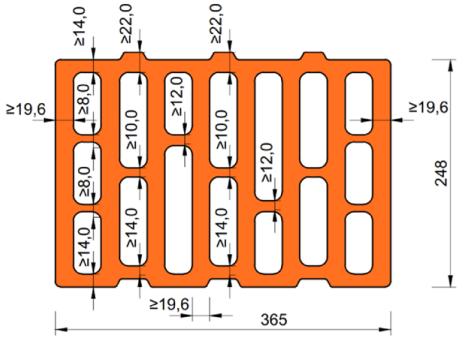
| | |
|---|---|
| **Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry** | **Annex C 44** |
| **Performances hollow clay brick Poroton FZ7,5 with insulation**<br>Group factors, characteristic Resistances and Displacements | |

## Brick type: Hollow clay brick Poroton FZ9 with insulation

### Table C150: Stone description

| | | |
|---|---|---|
| Brick type | | Hollow clay brick Poroton FZ9 |
| Insulation material | | Rock wool |
| Density | $\rho$ [kg/dm³] | ≥ 0,90 |
| Normalised mean compressive strenght | $f_b$ [N/mm²] | ≥ 10 |
| Conversion factor for lower compressive strengths | | $(f_b / 10)^{0,5} \leq 1,0$ |
| Code | | EN 771-1:2011+A1:2015 |
| Producer (Country) | | e.g. Schlagmann (DE) |
| Brick dimensions | [mm] | 248 x 365 x 249 |
| Drilling method | | Rotary drilling |






### Table C151: Installation parameter

| Anchor size | | [-] | M8 | M10 | M12 | M16 | IG-M6 | IG-M8 | IG-M10 |
|---|---|---|---|---|---|---|---|---|---|
| Installation torque | $T_{inst}$ | [Nm] | ≤ 5 | ≤ 5 | ≤ 10 | ≤ 10 | ≤ 5 | ≤ 5 | ≤ 5 |
| Char. Edge distance (under fire conditions) | $c_{cr}$; ($c_{cr,fi}$) | [mm] | 120 (2 $h_{ef}$) (for shear loads perpendicular to the free edge: $c_{cr}$ = 250) | | | | | | |
| Minimum Edge Distance | $c_{min}$ | [mm] | 50 | | | | | | |
| Characteristic Spacing (under fire conditions) | $s_{cr,\,II}$; ($s_{cr,fi,\,II}$) | [mm] | 250 (4 $h_{ef}$) | | | | | | |
| | $s_{cr,\,\perp}$; ($s_{cr,fi,\,\perp}$) | [mm] | 250 (4 $h_{ef}$) | | | | | | |
| Minimum Spacing | $s_{min,\,II}$; $s_{min,\,\perp}$ | [mm] | 50 | | | | | | |

### Table C152: Reduction factors for single anchors at the edge

| Tension load | | | Shear load | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Perpendicular to the free edge | | | Parallel to the free edge | | |
| | with c ≥ | $\alpha_{edge,\,N}$ | | with c ≥ | $\alpha_{edge,\,V\perp}$ | | with c ≥ | $\alpha_{edge,\,V\,II}$ |
| | 50 | 1,00 | | 50 | 0,35 | | 50 | 1,00 |
| | 120 | 1,00 | | 250 | 1,00 | | 120 | 1,00 |

### Table C153: Factors for anchor groups under tension load

| Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|
| | with c ≥ | with s ≥ | $\alpha_{g\,II,\,N}$ | | with c ≥ | with s ≥ | $\alpha_{g\,\perp,\,N}$ |
| | 50 | 50 | 1,40 | | 50 | 50 | 1,15 |
| | 120 | 250 | 2,00 | | 120 | 250 | 2,00 |

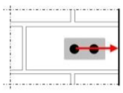
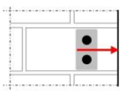
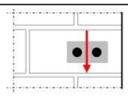
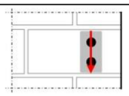
**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry**

**Performances hollow clay brick Poroton FZ9 with insulation**
Description of the stone, Installation parameters, Reductionfactors

**Annex C 45**

## Brick type: Hollow clay brick Poroton FZ9 with insulation

### Table C154: Factors for anchor groups under shear load

| | Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|---|
| Shear load perpendicular to the free edge |  | with c ≥ | with s ≥ | $\alpha_{g\,II,V\perp}$ |  | with c ≥ | with s ≥ | $\alpha_{g\perp,V\perp}$ |
| | | 50 | 50 | 0,60 | | 50 | 50 | 0,40 |
| | | 250 | 50 | 1,55 | | 250 | 50 | 1,00 |
| | | 250 | 250 | 2,00 | | 250 | 250 | 2,00 |
| Shear load parallel to the free edge |  | with c ≥ | with s ≥ | $\alpha_{g\,II,V\,II}$ |  | with c ≥ | with s ≥ | $\alpha_{g\perp,V\,II}$ |
| | | 50 | 50 | 2,00 | | 50 | 50 | 1,20 |
| | | 120 | 250 | 2,00 | | 120 | 250 | 2,00 |

### Table C155: Characteristic values of tension and shear load resistances

| Anchor size | Perforated sleeve | Effective Anchorage depth | Characteristic Resistances with c ≥ $c_{cr}$ and s ≥ $s_{cr}$ | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Use condition | | | | | | |
| | | | d/d | | | w/d w/w | | | d/d w/d w/w |
| | | | 40°C/24°C | 80°C/50°C | 120°C/72°C | 40°C/24°C | 80°C/50°C | 120°C/72°C | All temperature ranges |
| | | $h_{ef}$ | $N_{Rk,b} = N_{Rk,p}$ [2)] | | | $N_{Rk,b} = N_{Rk,p}$ [2)] | | | $V_{Rk,b}$ [2)] |
| | | [mm] | [kN] | | | | | | |
| **Normalised mean compressive strength $f_b \geq 10$ N/mm² 1)** | | | | | | | | | |
| M8 | SH 12 | 80 | 2,0 | 2,0 | 1,5 | 2,0 | 2,0 | 1,5 | 3,0 |
| M8 / M10/ IG-M6 | SH 16 | ≥ 85 | | | | | | | |
| M12 / IG-M8 | SH 20 | ≥ 85 | | | | | | | |
| M16 / IG-M10 | SH 20 | ≥ 85 | | | | | | | 4,5 |

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C150. For stones with higher strengths, the shown values are valid without conversion.

2) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\,II} = V_{Rk,c\perp}$ according to Annex C 3

### Table C156: Displacements

| Anchor size | $h_{ef}$ | $\delta N$ / N | $\delta N0$ | $\delta N\infty$ | $\delta V$ / V | $\delta V0$ | $\delta V\infty$ |
|---|---|---|---|---|---|---|---|
| | [mm] | [mm/kN] | [mm] | [mm] | [mm/kN] | [mm] | [mm] |
| M8 – M12 / IG-M6 – M10 | all | 0,13 | 0,13*$N_{Rk}$ / 3,5 | 2*$\delta N0$ | 0,55 | 0,55*$V_{Rk}$ / 3,5 | 1,5*$\delta V0$ |
| M16 | all | | | | 0,31 | 0,31*$V_{Rk}$ / 3,5 | 1,5*$\delta V0$ |

### Table C157: Characteristic values of tension and shear load resistances under fire exposure

| Anchor size | Perforated sleeve | Effecitve Anchorage depth | Characteristic Resistances $N_{Rk,b,fi} = N_{Rk,p,fi} = V_{Rk,b,fi}$ | | | |
|---|---|---|---|---|---|---|
| | | $h_{ef}$ | R30 | R60 | R90 | R120 |
| | | [mm] | [kN] | | | |
| M8 / M10 /IG-M6 | SH 16 | 130 | 0,64 | 0,37 | 0,11 | -1) |
| M12 / M16 / IG-M8 IG-M10 | SH 20 | ≥ 130 | | | | |

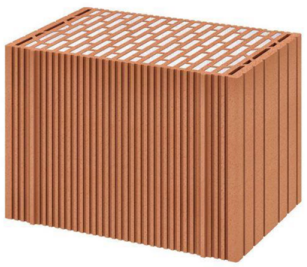
1) no performance assessed

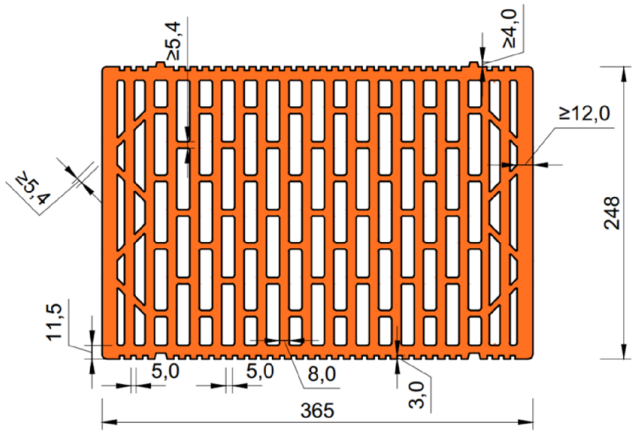
| | |
|---|---|
| **Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry** | **Annex C 46** |
| **Performances hollow clay brick Poroton FZ9 with insulation**<br>Group factors, characteristic Resistances and Displacements | |

## Brick type: Hollow clay brick Poroton S9 with insulation

### Table C158: Stone description

| | | |
|---|---|---|
| Brick type | | Hollow clay brick Poroton S9 |
| Insulationmaterial | | Perlite |
| Density | $\rho$ [kg/dm³] | ≥ 0,85 |
| Normalised mean compressive strenght | $f_b$ [N/mm²] | ≥ 12 |
| Conversion factor for lower compressive strengths | | $(f_b / 12)^{0,5} \leq 1,0$ |
| Code | | EN 771-1:2011+A1:2015 |
| Producer (Country) | | e.g. Schlagmann (DE) |
| Brick dimensions | [mm] | 248 x 365 x 249 |
| Drilling method | | Rotary drilling |






### Table C159: Installation parameter

| Anchor size | | [-] | M8 | M10 | M12 | M16 | IG-M6 | IG-M8 | IG-M10 |
|---|---|---|---|---|---|---|---|---|---|
| Installation torque | $T_{inst}$ | [Nm] | ≤ 5 | ≤ 5 | ≤ 10 | ≤ 10 | ≤ 5 | ≤ 5 | ≤ 5 |
| Char. Edge distance | $c_{cr}$ | [mm] | 120 (for shear loads perpendicular to the free edge: $c_{cr}$ = 250) | | | | | | |
| Minimum Edge Distance | $c_{min}$ | [mm] | 50 | | | | | | |
| Characteristic Spacing | $s_{cr,\parallel}$ | [mm] | 250 | | | | | | |
| | $s_{cr,\perp}$ | [mm] | 250 | | | | | | |
| Minimum Spacing | $s_{min,\parallel}$; $s_{min,\perp}$ | [mm] | 50 | | | | | | |

### Table C160: Reduction factors for single anchors at the edge

| Tension load | | | Shear load | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Perpendicular to the free edge | | | Parallel to the free edge | | |
| | with c ≥ | $\alpha_{edge,N}$ | | with c ≥ | $\alpha_{edge,V\perp}$ | | with c ≥ | $\alpha_{edge,V\parallel}$ |
| | 50 | 1,00 | | 50 | 0,30 | | 50 | 1,00 |
| | 120 | 1,00 | | 250 | 1,00 | | 120 | 1,00 |

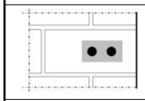
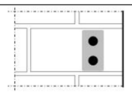
**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry**

**Performances hollow clay brick Poroton S9 with insulation**
Description of the stone, Installation parameters, Reductionfactors

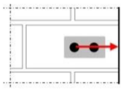
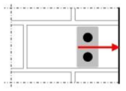
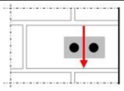
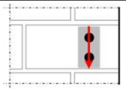
**Annex C 47**

## Brick type: Hollow clay brick Poroton S9 with insulation

### Table C161: Factors for anchor groups under tension load

| Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|
|  | with c ≥ | with s ≥ | $\alpha_{g\,II,N}$ |  | with c ≥ | with s ≥ | $\alpha_{g\,\perp,N}$ |
| | 50 | 50 | 1,50 | | 50 | 50 | 1,00 |
| | 120 | 250 | 2,00 | | 120 | 250 | 2,00 |

### Table C162: Factors for anchor groups under shear load

| | Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|---|
| Shear load perpendicular to the free edge |  | with c ≥ | with s ≥ | $\alpha_{g\,II,V\perp}$ |  | with c ≥ | with s ≥ | $\alpha_{g\,\perp,V\perp}$ |
| | | 50 | 50 | 0,40 | | 50 | 50 | 0,40 |
| | | 250 | 50 | 1,00 | | 250 | 50 | 1,20 |
| | | 250 | 250 | 2,00 | | 250 | 250 | 2,00 |
| Shear load parallel to the free edge |  | with c ≥ | with s ≥ | $\alpha_{g\,II,V\,II}$ |  | with c ≥ | with s ≥ | $\alpha_{g\,\perp,V\,II}$ |
| | | 50 | 50 | 1,65 | | 50 | 50 | 1,00 |
| | | 120 | 250 | 2,00 | | 120 | 250 | 2,00 |

### Table C163: Characteristic values of tension and shear load resistances

| Anchor size | Perforated sleeve | Effective Anchorage depth | Characteristic Resistances with c ≥ $c_{cr}$ and s ≥ $s_{cr}$ | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Use condition | | | | | | |
| | | | d/d | | | w/d<br>w/w | | | d/d<br>w/d<br>w/w |
| | | | 40°C/24°C | 80°C/50°C | 120°C/72°C | 40°C/24°C | 80°C/50°C | 120°C/72°C | All temperature ranges |
| | | $h_{ef}$ | $N_{Rk,b} = N_{Rk,p}$ [2)] | | | $N_{Rk,b} = N_{Rk,p}$ [2)] | | | $V_{Rk,b}$ [2)] |
| | | [mm] | [kN] | | | | | | |
| **Normalised mean compressive strength $f_b \geq 12$ N/mm² [1)]** | | | | | | | | | |
| M8 | SH 12 | 80 | 1,5 | 1,5 | 1,5 | 1,5 | 1,5 | 1,5 | 5,0 |
| M8 / M10/ IG-M6 | SH 16 | ≥ 85 | | | | | | | |
| M12 / M16 / IG-M8 / IG-M10 | SH 20 | ≥ 85 | | | | | | | |

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C158. For stones with higher strengths, the shown values are valid without conversion.

2) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\,II} = V_{Rk,c\,\perp}$ according to Annex C 3

### Table C164: Displacements

| Anchor size | $h_{ef}$ | $\delta N$ / N | $\delta N0$ | $\delta N\infty$ | $\delta V$ / V | $\delta V0$ | $\delta V\infty$ |
|---|---|---|---|---|---|---|---|
| | [mm] | [mm/kN] | [mm] | [mm] | [mm/kN] | [mm] | [mm] |
| M8 – M12 / IG-M6 – M10 | all | 0,13 | 0,13*$N_{Rk}$ / 3,5 | 2*$\delta N0$ | 0,55 | 0,55*$V_{Rk}$ / 3,5 | 1,5*$\delta V0$ |
| M16 | all | | | | 0,31 | 0,31*$V_{Rk}$ / 3,5 | 1,5*$\delta V0$ |

**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry**

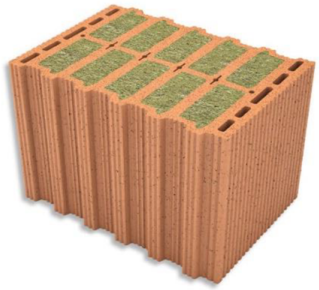
**Performances hollow clay brick Poroton S9 with insulation**
Group factors, characteristic Resistances and Displacements

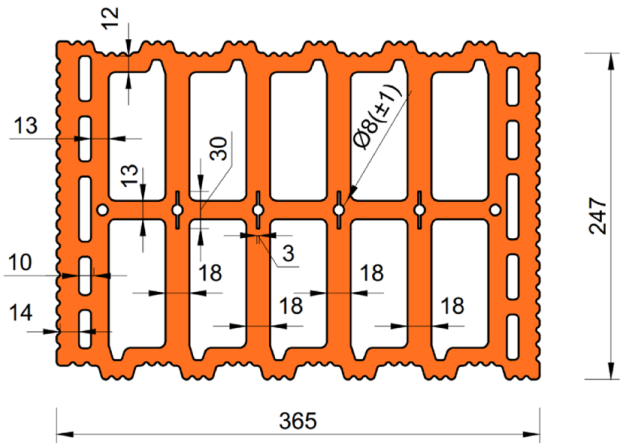
**Annex C 48**

## Brick type: Hollow clay brick Thermopor TV8+ with insulation

### Table C165: Stone description

| | | |
|---|---|---|
| Brick type | | Hollow clay brick Thermopor TV8+ |
| Insulation material | | Rock wool |
| Density | $\rho$ [kg/dm³] | ≥ 0,70 |
| Normalised mean compressive strenght | $f_b$ [N/mm²] | ≥ 10 |
| Conversion factor for lower compressive strengths | | $(f_b / 10)^{0,5} \leq 1,0$ |
| Code | | EN 771-1:2011+A1:2015 |
| Producer (Country) | | e.g. THERMOPOR GmbH (DE) |
| Brick dimensions | [mm] | 248 x 365 x 249 |
| Drilling method | | Rotary drilling |






### Table C166: Installation parameter

| Anchor size | | [-] | M8 | M10 | M12 | M16 | IG-M6 | IG-M8 | IG-M10 |
|---|---|---|---|---|---|---|---|---|---|
| Installation torque | $T_{inst}$ | [Nm] | ≤ 4 | ≤ 4 | ≤ 10 | ≤ 10 | ≤ 4 | ≤ 4 | ≤ 4 |
| Char. Edge distance | $c_{cr}$ | [mm] | 120 (for shear loads perpendicular to the free edge: $c_{cr}$ = 250) | | | | | | |
| Minimum Edge Distance | $c_{min}$ | [mm] | 50 | | | | | | |
| Characteristic Spacing | $s_{cr, II}$ | [mm] | 250 | | | | | | |
| | $s_{cr, \perp}$ | [mm] | 250 | | | | | | |
| Minimum Spacing | $s_{min, II}$; $s_{min, \perp}$ | [mm] | 50 | | | | | | |

### Table C167: Reduction factors for single anchors at the edge

| Tension load | | | Shear load | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Perpendicular to the free edge | | | Parallel to the free edge | | |
| | with c ≥ | $\alpha_{edge, N}$ | | with c ≥ | $\alpha_{edge, V \perp}$ | | with c ≥ | $\alpha_{edge, V II}$ |
| | 50 | 1,00 | | 50 | 0,25 | | 50 | 1,00 |
| | 120 | 1,00 | | 250 | 1,00 | | 120 | 1,00 |

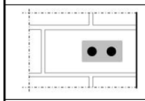
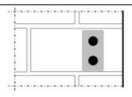
**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry**

**Performances hollow clay brick Thermopor TV8+ with insulation**
Description of the stone, Installation parameters, Reductionfactors

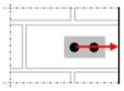
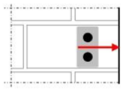
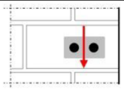
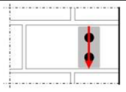
**Annex C 49**

## Brick type: Hollow clay brick Thermopor TV8+ with insulation

### Table C168: Factors for anchor groups under tension load

| Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|
| | with c ≥ | with s ≥ | $\alpha_{g\,II,\,N}$ | | with c ≥ | with s ≥ | $\alpha_{g\,\perp,\,N}$ |
|  | 50 | 50 | 1,00 |  | 50 | 50 | 1,00 |
| | 120 | 250 | 2,00 | | 120 | 250 | 2,00 |

### Table C169: Factors for anchor groups under shear load

| | Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|---|
| Shear load perpendicular to the free edge |  | with c ≥ | with s ≥ | $\alpha_{g\,II,V\perp}$ |  | with c ≥ | with s ≥ | $\alpha_{g\,\perp,V\perp}$ |
| | | 50 | 50 | 0,75 | | 50 | 50 | 0,50 |
| | | 250 | 50 | 2,00 | | 250 | 50 | 1,70 |
| | | 250 | 250 | 2,00 | | 250 | 250 | 2,00 |
| Shear load parallel to the free edge |  | with c ≥ | with s ≥ | $\alpha_{g\,II,V\,II}$ |  | with c ≥ | with s ≥ | $\alpha_{g\,\perp,V\,II}$ |
| | | 50 | 50 | 1,65 | | 50 | 50 | 1,15 |
| | | 120 | 250 | 2,00 | | 120 | 250 | 2,00 |

### Table C170: Characteristic values of tension and shear load resistances

| Anchor size | Perforated sleeve | Effective Anchorage depth | Characteristic Resistances with c ≥ $c_{cr}$ and s ≥ $s_{cr}$ | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Use condition | | | | | | |
| | | | d/d | | | w/d w/w | | | d/d w/d w/w |
| | | | 40°C/24°C | 80°C/50°C | 120°C/72°C | 40°C/24°C | 80°C/50°C | 120°C/72°C | All temperature ranges |
| | | $h_{ef}$ | $N_{Rk,b} = N_{Rk,p}$ 2) | | | $N_{Rk,b} = N_{Rk,p}$ 2) | | | $V_{Rk,b}$ 2) |
| | | [mm] | [kN] | | | | | | |
| **Normalised mean compressive strength $f_b \geq 10$ N/mm² 1)** | | | | | | | | | |
| M8 | SH 12 | 80 | 3,0 | 3,0 | 2,5 | 3,0 | 3,0 | 2,5 | 3,5 |
| M8 / M10/ IG-M6 | SH 16 | ≥ 85 | | | | | | | |
| M12 / IG-M8 | SH 20 | ≥ 85 | | | | | | | |
| M16 / IG-M10 | SH 20 | ≥ 85 | 3,5 | 3,5 | 3,0 | 3,5 | 3,5 | 3,0 | 7,0 |

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C165. For stones with higher strengths, the shown values are valid without conversion.

2) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\,II} = V_{Rk,c\,\perp}$ according to Annex C 3

### Table C171: Displacements

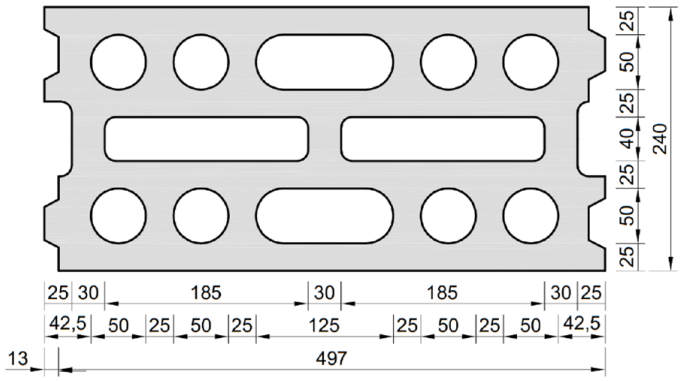
| Anchor size | $h_{ef}$ | $\delta_N$ / N | $\delta_{N0}$ | $\delta_{N\infty}$ | $\delta_V$ / V | $\delta_{V0}$ | $\delta_{V\infty}$ |
|---|---|---|---|---|---|---|---|
| | [mm] | [mm/kN] | [mm] | [mm] | [mm/kN] | [mm] | [mm] |
| M8 – M12 / IG-M6 – M10 | all | 0,13 | 0,13*$N_{Rk}$ / 3,5 | 2*$\delta_{N0}$ | 0,55 | 0,55*$V_{Rk}$ / 3,5 | 1,5*$\delta_{V0}$ |
| M16 | all | | | | 0,31 | 0,31*$V_{Rk}$ / 3,5 | 1,5*$\delta_{V0}$ |

| | |
|---|---|
| **Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry** | **Annex C 50** |
| **Performances hollow clay brick Thermopor TV8+ with insulation**<br>Group factors, characteristic Resistances and Displacements | |

## Brick type: Hollow light weight concrete brick HBL 16DF

### Table C172: Stone description

| | | |
|---|---|---|
| Brick type | | Hollow light weight concrete brick HBL 16DF |
| Density | $\rho$ [kg/dm³] | ≥ 1,0 |
| Normalised mean compressive strenght | $f_b$ [N/mm²] | ≥ 3,1 |
| Conversion factor for lower compressive strengths | | $(f_b/3{,}1)^{0,5} \leq 1{,}0$ |
| Code | | EN 771-3:2011+A1:2015 |
| Producer (Country) | | e.g. KLB Klimaleichtblock (DE) |
| Brick dimensions | [mm] | 500 x 250 x 240 |
| Drilling method | | Rotary drilling |




### Table C173: Installation parameter

| Anchor size | | [-] | M8 | M10 | M12 | M16 | IG-M6 | IG-M8 | IG-M10 |
|---|---|---|---|---|---|---|---|---|---|
| Installation torque | $T_{inst}$ | [Nm] | ≤ 2 | ≤ 2 | ≤ 5 | ≤ 5 | ≤ 2 | ≤ 5 | ≤ 5 |
| Char. Edge distance (under fire conditions) | $c_{cr}$; ($c_{cr,fi}$) | [mm] | 120 (2 $h_{ef}$) (for shear loads perpendicular to the free edge: $c_{cr}$ = 250) | | | | | | |
| Minimum Edge Distance | $c_{min}$ | [mm] | 50 | | | | | | |
| Characteristic Spacing (under fire conditions) | $s_{cr,\,II}$; ($s_{cr,fi,\,II}$) | [mm] | 500 (4 $h_{ef}$) | | | | | | |
| | $s_{cr,\,\perp}$; ($s_{cr,fi,\,\perp}$) | [mm] | 250 (4 $h_{ef}$) | | | | | | |
| Minimum Spacing | $s_{min,\,II}$; $s_{min,\,\perp}$ | [mm] | 50 | | | | | | |

### Table C174: Reduction factors for single anchors at the edge

| Tension load | | | Shear load | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Perpendicular to the free edge | | | Parallel to the free edge | | |
| | with c ≥ | $\alpha_{edge,\,N}$ | | with c ≥ | $\alpha_{edge,\,V\perp}$ | | with c ≥ | $\alpha_{edge,\,V\,II}$ |
| | 50 | 1,00 | | 50 | 0,30 | | 50 | 1,00 |
| | 120 | 1,00 | | 250 | 1,00 | | 120 | 1,00 |

### Table C175: Factors for anchor groups under tension load

| Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|
| | with c ≥ | with s ≥ | $\alpha_{g\,II,\,N}$ | | with c ≥ | with s ≥ | $\alpha_{g\,\perp,\,N}$ |
| | 50 | 50 | 2,00 | | 50 | 50 | 1,55 |
| | 120 | 500 | 2,00 | | 120 | 250 | 2,00 |

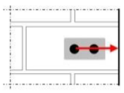
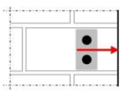
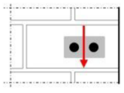
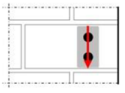
**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry**

**Performances hollow light weight concrete brick HBL 16DF**
Description of the stone, Installation parameters, Reductionfactors

**Annex C 51**

## Brick type: Hollow light weight concrete brick HBL 16DF

### Table C176: Factors for anchor groups under shear load

| | Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|---|
| Shear load perpendicular to the free edge |  | with c ≥ | with s ≥ | $\alpha_{g\,II,V\perp}$ |  | with c ≥ | with s ≥ | $\alpha_{g\perp,V\perp}$ |
| | | 50 | 50 | 0,60 | | 50 | 50 | 0,35 |
| | | 120 | 50 | 2,00 | | 120 | 50 | 1,15 |
| | | 120 | 500 | 2,00 | | 120 | 250 | 2,00 |
| Shear load parallel to the free edge |  | with c ≥ | with s ≥ | $\alpha_{g\,II,V\,II}$ |  | with c ≥ | with s ≥ | $\alpha_{g\perp,V\,II}$ |
| | | 50 | 50 | 1,30 | | 50 | 50 | 1,00 |
| | | 120 | 250 | 2,00 | | | | |
| | | 120 | 500 | 2,00 | | 120 | 250 | 2,00 |

### Table C177: Characteristic values of tension and shear load resistances

| Anchor size | Perforated sleeve | Effective Anchorage depth | Characteristic Resistances with $c \geq c_{cr}$ and $s \geq s_{cr}$ | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Use condition | | | | | | |
| | | | d/d | | | w/d<br>w/w | | | d/d<br>w/d<br>w/w |
| | | | 40°C/24°C | 80°C/50°C | 120°C/72°C | 40°C/24°C | 80°C/50°C | 120°C/72°C | All temperature ranges |
| | | $h_{ef}$ | $N_{Rk,b} = N_{Rk,p}$ 2) | | | $N_{Rk,b} = N_{Rk,p}$ 2) | | | $V_{Rk,b}$ 2) |
| | | [mm] | [kN] | | | | | | |
| **Normalised mean compressive strength $f_b \geq 3{,}1$ N/mm² 1)** | | | | | | | | | |
| M8 / M10/ IG-M6 | SH 16 | ≥ 85 | 1,2 | 1,2 | 0,9 | 1,2 | 1,2 | 0,9 | 2,0 |
| M12 / IG-M8 | SH 20 | ≥ 85 | 1,5 | 1,5 | 1,2 | 1,5 | 1,5 | 1,2 | 3,0 |
| M16 / IG-M10 | SH 20 | ≥ 85 | | | | | | | 5,0 |

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C172. For stones with higher strengths, the shown values are valid without conversion.

2) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\,II} = V_{Rk,c\perp}$ according to Annex C 3

### Table C178: Displacements

| Anchor size | $h_{ef}$ | $\delta N$ / N | $\delta N_0$ | $\delta N_\infty$ | $\delta V$ / V | $\delta V_0$ | $\delta V_\infty$ |
|---|---|---|---|---|---|---|---|
| | [mm] | [mm/kN] | [mm] | [mm] | [mm/kN] | [mm] | [mm] |
| M8 – M12 / IG-M6 – M10 | all | 0,13 | 0,13*$N_{Rk}$ / 3,5 | 2*$\delta N_0$ | 0,55 | 0,55*$V_{Rk}$ / 3,5 | 1,5*$\delta V_0$ |
| M16 | all | | | | 0,31 | 0,31*$V_{Rk}$ / 3,5 | 1,5*$\delta V_0$ |

### Table C179: Characteristic values of tension and shear load resistances under fire exposure

| Anchor size | Perforated sleeve | Effecitve Anchorage depth | Characteristic Resistances $N_{Rk,b,fi} = N_{Rk,p,fi} = V_{Rk,b,fi}$ | | | |
|---|---|---|---|---|---|---|
| | | $h_{ef}$ | R30 | R60 | R90 | R120 |
| | | [mm] | [kN] | | | |
| M8 / M10 / IG-M6 | SH 16 | 130 | 0,29 | 0,21 | -1) | -1) |
| M12 / IG-M8 | SH 20 | ≥ 130 | | | | |
| M16 / IG-M10 | SH 20 | ≥ 130 | 0,29 | 0,21 | 0,12 | -1) |

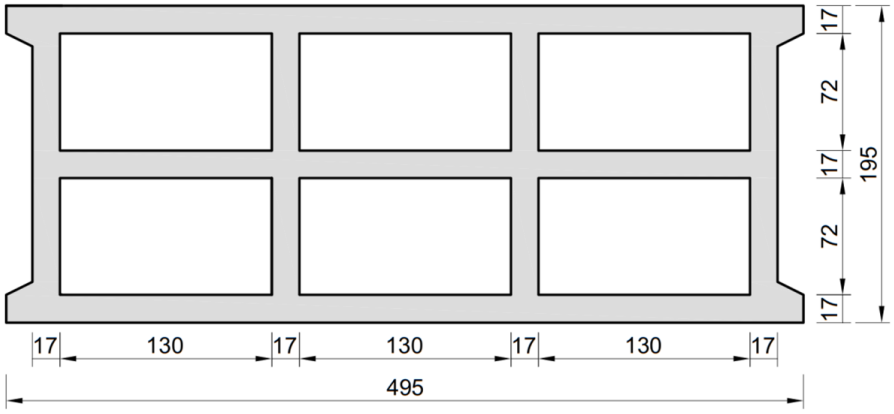
1) no performance assessed

| | |
|---|---|
| **Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry** | **Annex C 52** |
| **Performances hollow light weight concrete brick HBL 16DF**<br>Group factors, characteristic Resistances and Displacements | |

## Brick type: Hollow concrete brick Bloc Creux B40

### Table C180: Stone description

| | | |
|---|---|---|
| Brick type | | Hollow concrete brick Bloc Creux B40 |
| Density | $\rho$ [kg/dm³] | ≥ 0,8 |
| Normalised mean compressive strenght | $f_b$ [N/mm²] | ≥ 5,2 |
| Conversion factor for lower compressive strengths | | $(f_b / 5{,}2)^{0,5} \leq 1{,}0$ |
| Code | | EN 772-1 |
| Producer (Country) | | e.g. Leroux (FR) |
| Brick dimensions | [mm] | 500 x 200 x 200 |
| Drilling method | | Rotary drilling |




### Table C181: Installation parameter

| Anchor size | | [-] | M8 | M10 | M12 | M16 | IG-M6 | IG-M8 | IG-M10 |
|---|---|---|---|---|---|---|---|---|---|
| Installation torque | $T_{inst}$ | [Nm] | ≤ 4 | ≤ 4 | ≤ 4 | ≤ 4 | ≤ 4 | ≤ 4 | ≤ 4 |
| Char. Edge distance | $c_{cr}$ | [mm] | 120 (for shear loads perpendicular to the free edge: $c_{cr}$ = 170) | | | | | | |
| Minimum Edge Distance | $c_{min}$ | [mm] | 50 | | | | | | |
| Characteristic Spacing | $s_{cr, II}$ | [mm] | 170 | | | | | | |
| | $s_{cr, \perp}$ | [mm] | 200 | | | | | | |
| Minimum Spacing | $s_{min, II}$; $s_{min, \perp}$ | [mm] | 50 | | | | | | |

### Table C182: Reduction factors for single anchors at the edge

| Tension load | | | Shear load | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Perpendicular to the free edge | | | Parallel to the free edge | | |
| | with c ≥ | $\alpha_{edge, N}$ | | with c ≥ | $\alpha_{edge, V \perp}$ | | with c ≥ | $\alpha_{edge, V II}$ |
| | 50 | 1,00 | | 50 | 0,35 | | 50 | 1,00 |
| | 120 | 1,00 | | 170 | 1,00 | | 120 | 1,00 |

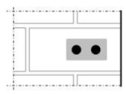
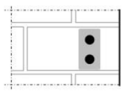
**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry**

**Performances hollow concrete brick Bloc Creux B40**
Description of the stone, Installation parameters, Reductionfactors

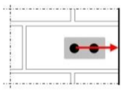
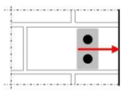
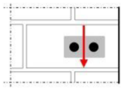
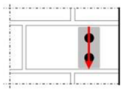
**Annex C 53**

## Brick type: Hollow concrete brick Bloc Creux B40

### Table C183: Factors for anchor groups under tension load

| Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|
| | with c ≥ | with s ≥ | $\alpha_{g\ II,\ N}$ | | with c ≥ | with s ≥ | $\alpha_{g\ \perp,\ N}$ |
|  | 50 | 50 | 1,50 |  | 50 | 50 | 1,40 |
| | 50 | 170 | 2,00 | | 50 | 200 | 2,00 |
| | 120 | 170 | 2,00 | | 120 | 200 | 2,00 |

### Table C184: Factors for anchor groups under shear load

| | Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|---|
| Shear load perpendicular to the free edge |  | with c ≥ | with s ≥ | $\alpha_{g\ II,V\perp}$ |  | with c ≥ | with s ≥ | $\alpha_{g\ \perp,V\perp}$ |
| | | 50 | 50 | 0,55 | | 50 | 50 | 0,35 |
| | | 120 | 50 | 1,30 | | 120 | 50 | 0,85 |
| | | 120 | 170 | 2,00 | | 120 | 200 | 2,00 |
| Shear load parallel to the free edge |  | with c ≥ | with s ≥ | $\alpha_{g\ II,V\ II}$ |  | with c ≥ | with s ≥ | $\alpha_{g\ \perp,V\ II}$ |
| | | 50 | 50 | 1,10 | | 50 | 50 | 1,00 |
| | | 120 | 170 | 2,00 | | 50 | 200 | 2,00 |
| | | | | | | 120 | 200 | 2,00 |

### Table C185: Characteristic values of tension and shear load resistances

| Anchor size | Perforated sleeve | Effective Anchorage depth | Characteristic Resistances with c ≥ $c_{cr}$ and s ≥ $s_{cr}$ | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Use condition | | | | | | |
| | | | d/d | | | w/d w/w | | | d/d w/d w/w |
| | | | 40°C/24°C | 80°C/50°C | 120°C/72°C | 40°C/24°C | 80°C/50°C | 120°C/72°C | All temperature ranges |
| | | $h_{ef}$ | $N_{Rk,b} = N_{Rk,p}$ 2) | | | $N_{Rk,b} = N_{Rk,p}$ 2) | | | $V_{Rk,b}$ 2) |
| | | [mm] | [kN] | | | | | | |
| **Normalised mean compressive strength $f_b \geq 5{,}2$ N/mm² 1)** | | | | | | | | | |
| M8 / M10/ IG-M6 | SH 16 | 130 | 2,0 | 1,5 | 1,2 | 2,0 | 1,5 | 1,2 | 6,0 |
| M12 / M16 / IG-M8 / IG-M10 | SH 20 | ≥ 130 | | | | | | | |

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C180. For stones with higher strengths, the shown values are valid without conversion.

2) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\ II} = V_{Rk,c\perp}$ according to Annex C 3

### Table C186: Displacements

| Anchor size | $h_{ef}$ | $\delta_N$ / N | $\delta_{N0}$ | $\delta_{N\infty}$ | $\delta_V$ / V | $\delta_{V0}$ | $\delta_{V\infty}$ |
|---|---|---|---|---|---|---|---|
| | [mm] | [mm/kN] | [mm] | [mm] | [mm/kN] | [mm] | [mm] |
| M8 – M12 / IG-M6 – M10 | all | 0,13 | 0,13*$N_{Rk}$ / 3,5 | 2*$\delta_{N0}$ | 0,55 | 0,55*$V_{Rk}$ / 3,5 | 1,5*$\delta_{V0}$ |
| M16 | all | | | | 0,31 | 0,31*$V_{Rk}$ / 3,5 | 1,5*$\delta_{V0}$ |

**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry**

**Performances hollow concrete brick Bloc Creux B40**
Group factors, characteristic Resistances and Displacements

**Annex C 54**

## Brick type: Solid light weight concrete brick

### Table C187: Stone description

| | | |
|---|---|---|
| Brick type | | Solid light weight concrete brick |
| Density | $\rho$ [kg/dm³] | ≥ 0,6 |
| Normalised mean compressive strenght | $f_b$ [N/mm²] | ≥ 2 |
| Conversion factor for lower compressive strengths | | $(f_b / 2)^{0,5} \leq 1,0$ |
| Code | | EN 771-3:2011+A1:2015 |
| Producer (Country) | | e.g. Bisotherm (DE) |
| Brick dimensions | [mm] | ≥ 240 x 300 x 113 |
| Drilling method | | Rotary drilling |

### Table C188: Installation parameter

| Anchor size | | [-] | M8 | M10 | M12 | M16 | IG-M6 | IG-M8 | IG-M10 |
|---|---|---|---|---|---|---|---|---|---|
| Installation torque | $T_{inst}$ | [Nm] | ≤ 2 | ≤ 2 | ≤ 2 | ≤ 2 | ≤ 2 | ≤ 2 | ≤ 2 |
| Char. Edge distance | $c_{cr}$ | [mm] | 150 | | | | | | |
| Minimum Edge Distance | $c_{min}$ | [mm] | 60 | | | | | | |
| Characteristic Spacing | $s_{cr,\,II}$ | [mm] | 300 | | | | | | |
| | $s_{cr,\,\perp}$ | [mm] | 300 | | | | | | |
| Minimum Spacing | $s_{min,\,II}$; $s_{min,\,\perp}$ | [mm] | 120 | | | | | | |

### Table C189: Reduction factors for single anchors at the edge

| Tension load | | | Shear load | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Perpendicular to the free edge | | | Parallel to the free edge | | |
| | with c ≥ | $\alpha_{edge,\,N}$ | | with c ≥ | $\alpha_{edge,\,V\,\perp}$ | | with c ≥ | $\alpha_{edge,\,V\,II}$ |
| | 60 | 1,00 | | 60 | 0,25 | | 60 | 0,40 |
| | 150 | 1,00 | | 150 | 1,00 | | 100 | 1,00 |

### Table C190: Factors for anchor groups under tension load

| Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|
| | with c ≥ | with s ≥ | $\alpha_{g\,II,\,N}$ | | with c ≥ | with s ≥ | $\alpha_{g\,\perp,\,N}$ |
| | 60 | 120 | 1,00 | | 60 | 120 | 1,00 |
| | 150 | 300 | 2,00 | | 150 | 300 | 2,00 |

### Table C191: Factors for anchor groups under shear load

| | Anchor position parallel to hor. joint | | | | Anchor position perpendicular to hor. joint | | | |
|---|---|---|---|---|---|---|---|---|
| Shear load perpendicular to the free edge | | with c ≥ | with s ≥ | $\alpha_{g\,II,V\,\perp}$ | | with c ≥ | with s ≥ | $\alpha_{g\,\perp,\,V\,\perp}$ |
| | | 60 | 120 | 0,25 | | 60 | 120 | 0,25 |
| | | 150 | 120 | 1,00 | | 150 | 120 | 1,00 |
| | | 150 | 300 | 2,00 | | 150 | 300 | 2,00 |
| Shear load parallel to the free edge | | with c ≥ | with s ≥ | $\alpha_{g\,II,V\,II}$ | | with c ≥ | with s ≥ | $\alpha_{g\,\perp,V\,II}$ |
| | | 60 | 120 | 0,40 | | 60 | 120 | 0,40 |
| | | 100 | 120 | 1,00 | | 100 | 120 | 1,00 |
| | | 150 | 300 | 2,00 | | 150 | 300 | 2,00 |

**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry**

**Performances solid light weight concrete brick**
Description of the stone, Installation parameters, Reduction- and Group factors

**Annex C 55**

## Brick type: Solid light weight concrete brick

### Table C192: Characteristic values of tension and shear load resistances

| Anchor size | Perforated sleeve | Effective Anchorage depth | Characteristic Resistances with $c \geq c_{cr}$ and $s \geq s_{cr}$ | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Use condition | | | | | | |
| | | | d/d | | | w/d w/w | | | d/d w/d w/w |
| | | | 40°C/24°C | 80°C/50°C | 120°C/72°C | 40°C/24°C | 80°C/50°C | 120°C/72°C | All temperature ranges |
| | | $h_{ef}$ | $N_{Rk,b} = N_{Rk,p}$ [2)] | | | $N_{Rk,b} = N_{Rk,p}$ [2)] | | | $V_{Rk,b}$ [2)] |
| | | [mm] | [kN] | | | | | | |
| **Normalised mean compressive strength $f_b \geq 2$ N/mm² [1)]** | | | | | | | | | |
| M8 | - | 80 | 3,0 | 2,5 | 2,0 | 2,5 | 2,0 | 1,5 | 3,0 |
| M10 / IG-M6 | - | 90 | | | | | | | |
| M12 / M16 / IG-M8 / IG-M10 | - | 100 | | | | | | | |
| M8 | SH 12 | 80 | 2,5 | 2,5 | 2,0 | 2,5 | 2,0 | 1,5 | |
| M8 / M10/ IG-M6 | SH 16 | ≥ 85 | | | | | | | |
| M12 / M16 / IG-M8 / IG-M10 | SH 20 | ≥ 85 | | | | | | | |

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C187. For stones with higher strengths, the shown values are valid without conversion.

2) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\,II} = V_{Rk,c\,\perp}$ according to Annex C 3

### Table C193: Displacements

| Anchor size | $h_{ef}$ | $\delta_N$ / N | $\delta_{N0}$ | $\delta_{N\infty}$ | $\delta_V$ / V | $\delta_{V0}$ | $\delta_{V\infty}$ |
|---|---|---|---|---|---|---|---|
| | [mm] | [mm/kN] | [mm] | [mm] | [mm/kN] | [mm] | [mm] |
| M8 – M12 / IG-M6 – M10 | all | 0,1 | $0,1*N_{Rk} / 3,5$ | $2*\delta_{N0}$ | 0,3 | $0,3*V_{Rk} / 3,5$ | $1,5*\delta_{V0}$ |
| M16 | all | | | | 0,1 | $0,1*V_{Rk} / 3,5$ | $1,5*\delta_{V0}$ |

**Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry**

**Performances solid light weight concrete brick**
Characteristic Resistances and Displacements

**Annex C 56**