ORYX® BOARDS
Protecting steel constructions

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ORYX®, passion for passive fire protection

ORYX® is the specialist in passive fire protection for buildings. Thanks to our passionate expertise and extensive product range, ORYX® provides solutions for countless applications in in the field of fire-resistant load-bearing structures, fire-resistant compartments and the creation of fire-resistant penetrations.

Our specialists are always ready to provide you with technical advice and support.

PRODUCT DESCRIPTION

ORYX® BOARDS are top-grade homogenous fibre-reinforced fire-resistant and acoustic boards based on magnesium oxide, magnesium chloride, fibreglass and perlite that can be used in many different applications in both dwellings and utilities buildings.

CHARACTERISTICS

- Non-flammable fire class A1 in line with European standard EN 13501-1
- Fire-resistance tested in various applications, such as ceilings, (shaft) walls and steel cladding, with a classification of EI 30 up to EI 120 (EN 13501-2)
- Tested for acoustic applications. The boards have an Rw value of between 49 and 60 dB, and with a double layer a reduction of 70 dB is even possible
- Impact-resistant and high tensile strength
- Equivalent weight about 1000 kg/m³
- Insensitive to vermin
- Asbestos-free
- Easy and fast to process using traditional tools
- Available in various sizes and thicknesses
- Easy to finish with plaster, paint, wallpaper or tiles

APPLICATIONS

- ORYX® Boards are used to realise fire-resistant ceilings, walls and steel cladding
- Also suitable for walls or ceilings with penetrations
- In both dwellings and utilities buildings, for new construction or renovation

ORYX® – Hoogschaijksestraat 15 – 5374 EC Schaijk – The Netherlands

FITTING GUIDELINES

- For boards with a thickness of 12 mm, use divergent point staples with a spine width of at least 10 mm, galvanised and resin-tipped with a length of at least 22 mm and a thickness of at least 1.5 mm. For boards with a thickness of 18 mm, use divergent point staples with a spine width of at least 10 mm, galvanised and resin-tipped with a length of at least 35 mm and a thickness of at least 1.5 mm
- Distance between the staples to the edge of the board at least 15 mm. The centre-to-centre distance using staples is no more than 150 mm. Ensure that the spine of the staple sinks to at least 0.5 mm below the surface of the board
- Place the boards with a free space of 6 mm around the structure at top, bottom and sides. Only fasten ORYX® Boards to the C-profiles, not to the U-profiles. Staggered joints are not allowed
- ORYX® Boards must be glued in all cases along both the long-side and short-side seams using an adhesive suitable for creating durable, elastic and very strong seals
- The adhesive between the board edges must be pressed firmly to ensure it fills the space properly. The width of the joint must be at least 3 mm and no more than 5 mm. When using adhesive the joint width must not be abutted to 0. Use the spacers
- ORYR® Boards must always be mounted on a sufficiently ventilated system or backing structure. The dew point must not be in or on the board.
- When using in humid spaces, such as basements, the boards must be sealed with a waterproofing agent

PACKAGING AND STORAGE

- ORYX® Boards are supplied on pallets packed in foil with protective corner guards
- ORYX® Boards must be transported horizontally and dry and stored on a flat surface
- Don't grab the boards by the corners, and don't let them rest on their corners or edges
- ORYX® advises a maximum stacking height of 2 pallets
- To prevent the boards from deforming, we do not recommend vertical storage
- Keep dry and frost-free at temperatures between +5°C and +30°C

LIMITATIONS

- In the case of steel cladding, ORYX® Boards may only be mounted on coated steel parts
- With large temperature differences to the rear of the boards, a damp-proof foil must be applied
- If the boards become damp during transport or storage, they may only be used once completely dry
- Once the ORYX® Boards have been fitted, the relative humidity for the rest of the construction phase must be between 40% and 80%
- Wet plaster and wet floor finishes must be dry if possible before fitting the boards, and at the very least before gluing and finishing, as construction moisture delays the drying process of adhesives and finishes
- Heating using a gas heater is not permitted, as this damages the ORYX® Boards due to the risk of condensation. Thermal shocks must be avoided
- ORYX® Boards may not be used for prolonged heat-resistant applications, such as fireplaces, heaters, boiler rooms where the active load is above room temperature

DIMENSIONS

Description	Thickness (mm)	Length (mm)	Width (mm)	Weight per board (kg)
ORYX® Board	9	2743	600	15
ORYX® Board	9	2743	1200	30
ORYX® Board	12	2743	600	20
ORYX® Board	12	2743	1200	40
ORYX® Board	18	2300	1200	45

SAFETY REQUIREMENTS

- Non-toxic, non-explosive and non-flammable
- Dust may irritate the eyes. Preferably wear safety goggles. If eyes become irritated, remove any contact lenses and rinse for at least 15 minutes with water or saline solution
- Dust may irritate the skin, but is not absorbed by undamaged skin. Wash the skin with soap and water and seek medical assistance if irritation persists
- Swallowing is unlikely but the mouth and respiratory tract may become irritated. Dilute with a considerable amount of water. Avoid vomiting and seek medical assistance
- Dust can irritate the nose, throat and respiratory tract. Preferably wear a dust mask. If irritation occurs, move to an area with fresh air. If you get shortness of breath or start to wheeze, seek medical assistance. We recommend cleaning with an industrial vacuum cleaner with particulate filter. Fine water spray can be used to sweep up the dust
- Dust can be removed as an inert, inorganic and non-toxic material in line with local guidelines
- Avoid contact with hydrofluoric acid

DISCLAIMER

The content of this brochure has been compiled with the greatest possible care and is only intended for information purposes. The information contained herein does not constitute a partial or full guarantee or proposal for which we are liable. We reserve the right to change or alter product specifications.

The data stated in this brochure are obtained under certain circumstances. The user is personally responsible for proper application.

All information about our products and applications can be found at www.oryx.pro

FITTING INSTRUCTIONS

Buildings are increasngly being constructed with a steel (primary) load-bearing structure. Most steel structures require fire protection.

The critical steel temperature is essential with most steel structures. If higher temperatures (in the event of fire) cause the structure to fail in its load-bearing capacity, and the structure yields, the critical steel temperature has been reached.

ORYX® Board is tested in compliance with EN 13381-4. The test uses a loaded girder and a reference girder. Report numbers: 2012-Efectis-R0531 and -R0532.

It is very important that you calculate whether the required structure can be covered with ORYX® Board. Steel cladding (columns and girders) is tested with a single sheet of 18 mm ORYX® Board. To ascertain whether the structure can be covered in line with the test with ORYX® Board, you must follow the steps below:

1) Determine the profile type (e.g. HEA 240)
2) Determine the application (column or girder)
3) Determine the critical steel temperature
4) Ascertain on how many sides the profile must be covered (3- or 4-sided)
5) Read in the tables whether cladding is applicable

Tables
The tables give the critical steel temperature with the profile factor and which profile (greater than or less than) is applicable.

Example: For R60, with a critical steel temperature of 550 °C (4-sided cladding), then IPE 220 or greater is permitted.

Take note! If the steel profile used or critical temperature of your structure is not included in the tables, then ORYX® can be equipped with calculations and recommendations on request. The tables do not apply.

TABLE FOR 3-SIDED CLADDING OF GIRDERS AND COLUMNS

ORYX® Board 18 mm

Table of fire-resistance of 30 minutes

Critical steel temperature (°C)	350	400	450	500	550	600	650	700	750
Max. profile factor (m^{-1})	>350	>350	>350	>350	>350	>350	>350	>350	>350
HEA profile ≥	all	all	all	all	all	all	all	all	all
HEB profile ≥	all	all	all	all	all	all	all	all	all
HEM profile ≥	all	all	all	all	all	all	all	all	all
IPE profile ≥	all	all	all	all	all	all	all	all	all

Table of fire-resistance of 60 minutes

Critical steel temperature (°C)	350	400	450	500	550	600	650	700	750
Max. profile factor (m^{-1})	110	130	150	180	200	230	270	320	350
HEA profile ≥	200	140	all	all	all	all	all	all	all
HEB profile ≥	120	all	all	all	all	all	all	all	all
HEM profile ≥	all	all	all	all	all	all	all	all	all
IPE profile ≥	500	360	270	200	160	120	all	all	all

Table of fire-resistance of 90 minutes

Critical steel temperature (°C)	350	400	450	500	550	600	650	700	750
Max. profile factor (m^{-1})	50	60	60	70	70	80	90	100	110
HEA profile ≥	-	-	-	360	360	300	260	220	200
HEB profile ≥	-	300	300	240	240	200	160	140	120
HEM profile ≥	200-800	140	140	all	all	all	all	all	all
IPE profile ≥	-	-	-	-	-	-	-	550	450

TABLE FOR 4-SIDED CLADDING OF COLUMNS

ORYX® Board 18 mm

Table of fire-resistance of 30 minutes

Critical steel temperature (°C)	350	400	450	500	550	600	650	700	750
Max. profile factor (m^{-1})	>350	>350	>350	>350	>350	>350	>350	>350	>350
HEA profile ≥	all	all	all	all	all	all	all	all	all
HEB profile ≥	all	all	all	all	all	all	all	all	all
HEM profile ≥	all	all	all	all	all	all	all	all	all
IPE profile ≥	all	all	all	all	all	all	all	all	all

Table of fire-resistance of 60 minutes

Critical steel temperature (°C)	350	400	450	500	550	600	650	700	750
Max. profile factor (m^{-1})	110	130	150	180	200	230	270	320	350
HEA profile ≥	300	240	200	140	all	all	all	all	all
HEB profile ≥	180	140	120	all	all	all	all	all	all
HEM profile ≥	all	all	all	all	all	all	all	all	all
IPE profile ≥	600	450	360	270	220	180	140	100	all

Table of fire-resistance of 90 minutes

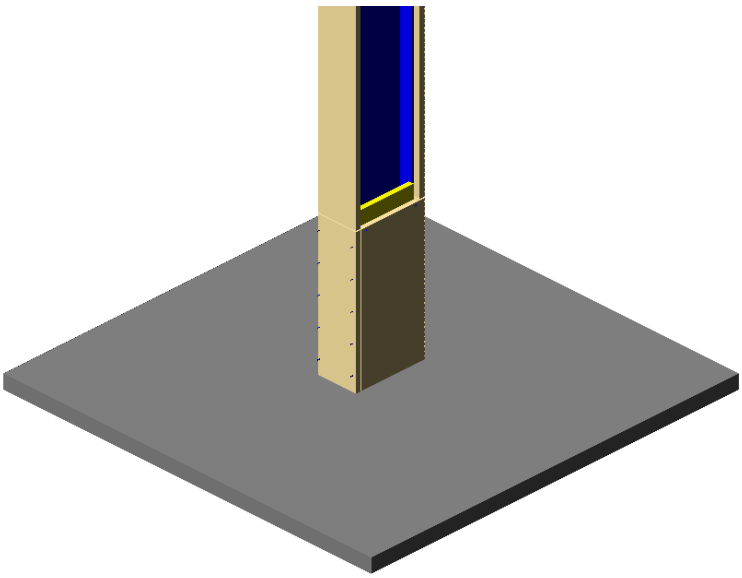
Critical steel temperature (°C)	350	400	450	500	550	600	650	700	750
Max. profile factor (m^{-1})	50	60	60	70	70	80	90	100	110
HEA profile ≥	-	-	-	-	-	500	400	320	300
HEB profile ≥	-	-	-	450	450	300	260	220	180
HEM profile ≥	280-550	240	240	180	180	120	all	all	all
IPE profile ≥	-	-	-	-	-	-	-	-	-

PROCESSING ADVICE FOR COLUMN CLADDING

Column application 3- or 4-sided cladding

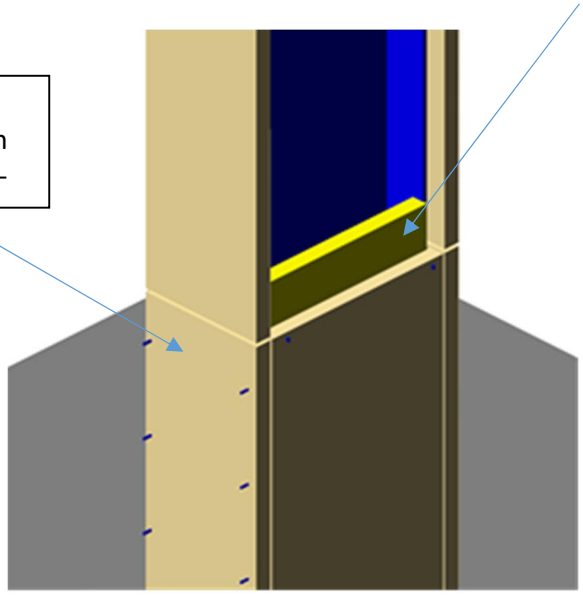
Material	1 x 18 mm ORYX® Board
Processing	1 x 18 mm ORYX® Board. Mutual board connection, stapled with 32 mm divergent point staples, centre-to-centre distance 100 mm. 18 mm ORYX® Board strips, 100 mm wide, behind seam seals between vertical boards, stapled with divergent point staples 32 mm, centre-to-centre distance 150 mm.
Seams	Seams 2 - 4 mm should always be glued with fire-resistant adhesive sealant.
Edges	n.a.
Test reports	*Fire-resistance:* Efectis Report 2012-Efectis-R0531 and 2012-Efectis-R0532

DETAIL COLUMN CLADDING



18 mm ORYX® Board strips, 100 mm wide, seam seals between vertical boards, stapled with divergent point staples 32 mm, centre-to-centre

Mutual board connection, 18 mm ORYX® Board, stapled with 32 mm divergent point staples, centre-to-

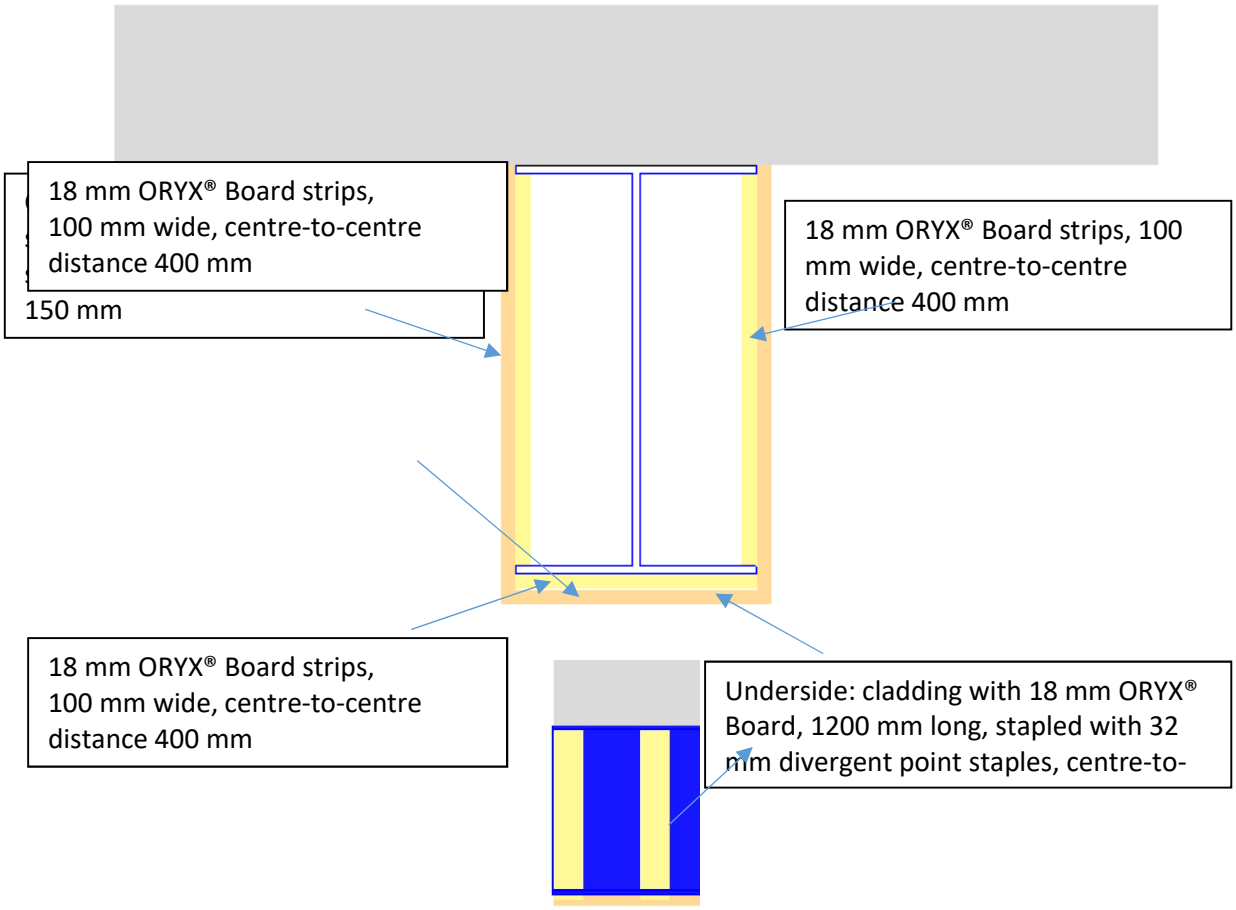


Processing advice for girder cladding

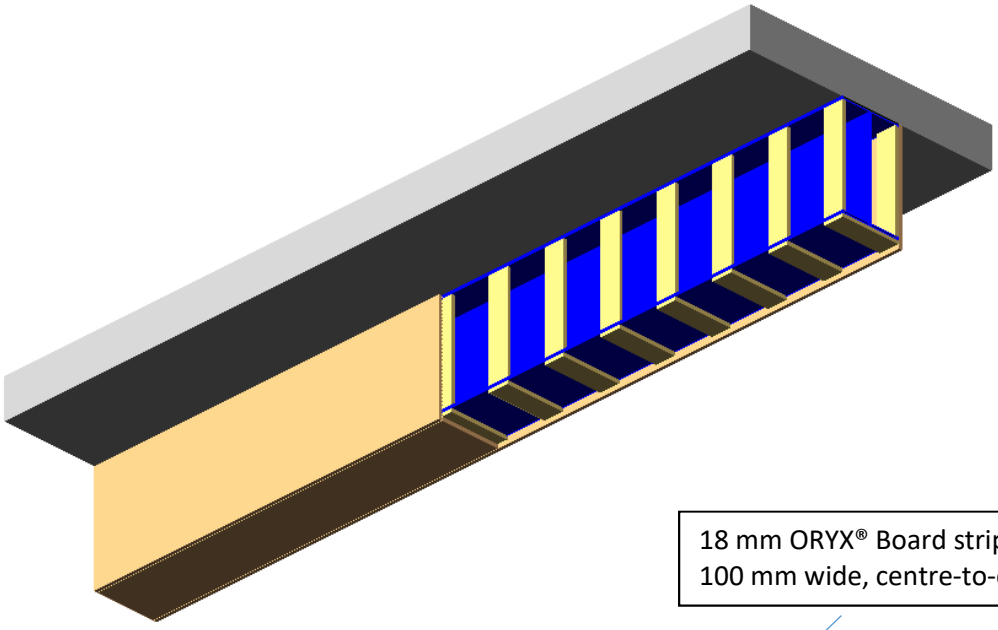
Girder application 3-sided cladding

Material	1 x 18 mm ORYX® Board
Processing	1 x 18 mm ORYX® Board strips, 100 mm wide between flanges. Underside cladding with 18 mm ORYX® Board, 1200 mm long, stapled with 32 mm divergent point staples, centre-to-centre distance 150 mm. Further cladding with ORYX® Board 18 mm, stapled with 32 mm divergent point staples, centre-to-centre distance 150 mm.
Seams	Seams 2 - 4 mm should always be glued with fire-resistant adhesive sealant.
Edges	n.a.
Reports	*Fire-resistance:* Efectis Report 2012-Efectis-R0531 and 2012-Efectis-R0532

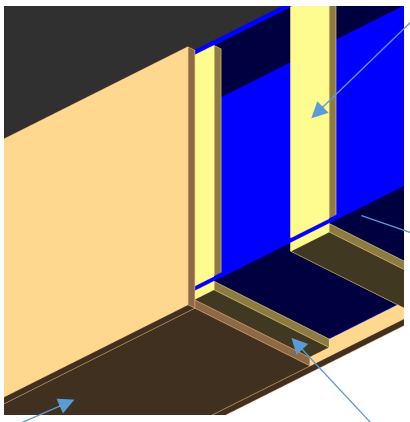
DETAIL GIRDER CLADDING



DETAIL GIRDER CLADDING



18 mm ORYX® Board strips, 100 mm wide, centre-to-centre



Cladding with 18 mm ORYX® Board, stapled with 32 mm divergent point staples, centre-to-

Underside: cladding with 18 mm ORYX® Board, 1200 mm long, stapled with 32 mm divergent point staples, centre-to-

18 mm ORYX® Board strips, 100 mm wide, centre-to-centre