HALF-SHELLS REFERENCES NUMBERS FOR DIFFERENT STEEL COLUMN PROFILES

Below you find the half-shell references, taking into account a critical temperature of 500°C. Should you require a fire resistance different from that mentioned below, or should you have any other type of post, please do not hesitate to contact us directly.

Fire resistance - R60 (1 hour)					
Type	HEA	HEB	IPE	IPN	UPE
80	-	-	COQ102	COQ102	COQ102
100	COQ0102	COQ0102	COQ0102	COQ0102	COQ0102
240	COQ0109	COQ0109	COQ0109	COQ0109	COQ0109
260	On request	On request	-	On request	-
270	-	-	On request	-	On request

Fire resistance - R120 (2 hours)					
Type	HEA	HEB	IPE	IPN	UPE
80	-	-	On request	On request	On request
100	COQ0106	COQ0106	On request	On request	On request
120	COQ0106	COQ0106	On request	On request	On request
140	COQ0107	COQ0107	On request	On request	On request
160	COQ0107	COQ0107	On request	COQ0107	COQ0107
180	COQ0108	COQ0108	On request	COQ0108	COQ0108
200	COQ0108	COQ108	COQ0108	COQ108	COQ0108
220	COQ0109	COQ0109	COQ0109	COQ0109	COQ0109
240	COQ0109	COQ109	COQ0109	COQ0109	COQ0109
260	On request	On request	-	On request	-
270	-	-	On request	-	On request

Example: In the case of R 120 (2 hours) fire protection for a HEA 240 post, a GEOFLAM® DC shell, reference COQ0109, should be applied. The diameter of the shell should be chosen so that there is a minimum of 10 mm between the metal profile and the inner wall of the shell, to enable the sisal fiber caulking to be applied.

Product codes	
Reférence	Product designation
COQ0102	GEOFLAM DC - int 190 - ext 250 - 3,00 meter - 30 mm thick.
COQ0106	GEOFLAM DC - int 220 - ext 300 - 3,00 meter - 40 mm thick
COQ0107	GEOFLAM DC - int 270 - ext 350 - 3,00 meter - 40 mm thick
COQ0108	GEOFLAM DC - int 320 - ext 400 - 3,00 meter - 40 mm thick
COQ0109	GEOFLAM DC - int 370 - ext 450 - 2,00 meter - 40 mm thick

TABLEAU DES RATIOS EN TERME DE FOURNITURE DE POSE

	GEOCOL	GEOPLASTER	SISAL FIBER
RATIO	1 bag for 4 posts 3 m high		1 roll for 20 posts 3 m high

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GEOSTAFF

Keeping you safe from fire comes naturally

GEOFLAM® DC HALF-SHELLS
A GEOSTAFF SOLUTION

Steel column protection with GEOFLAM® DC half-shells

Fire resistance up to 3 hours : R 15 à 180

Official Report n° EFR-22-000930

GEOSTAFF

SYSTEM PRESENTATION

The fire stability of steel structures is achieved by limiting the temperature rise of the steel.

When load-bearing structures are subjected to heat, it has been proven that, after a certain period of time and once the yield strength of the steel has been reduced to 60% of its initial value, they will collapse. The temperature at which this happens is known as the **critical temperature**.

For the sake of simplicity, the minimum critical temperature value in Eurocode 1993-1-2 that can be used is :

- 500°C (932°F) for compressed elements or elements subjected to axial bending and compression.

In order to guarantee the stability of these steel structures in the event of fire, the solution is to slow down the rate at which the steel heats up, henceeee favorably influency its fire behavior.
Following fire resistance tests carried out at the EFECTIS France laboratory, GEOSTAFF® offers, with official report no. EFR-22-000930, solutions validated by GEOFLAM® DC half-shells to protect metal structures according to:

- The required fire resistance duration (R 15 to 180)
- Critical temperature of the profile to be protected
- Mass factor of the profile to be protected (in m^{-1})

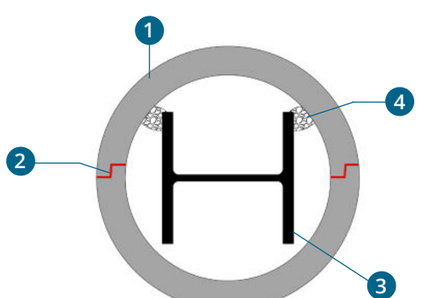
Test EN 13381-4	Thickness	EFECTIS classification report	Internal diameters*	Outer diameters*	Fire stability
Steel colums fire protection	From 25 to 45 mm	PV n° EFR-22-000930	Ø 140 to 420 mm	Ø 200 to 500 mm	R 15 à 180

*For other dimensions, please contact us.

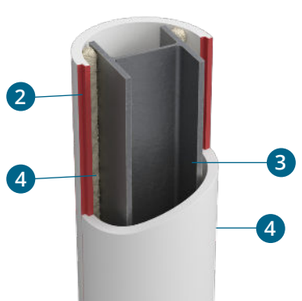
Extensions for the Official Report n° EFR-22-000930

Extension 23/01 *Cast-iron post protection*

Horizontal Section



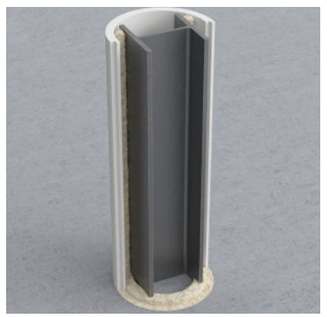
1. GEOFLAM® DC half-shell
2. GEOCOL®
3. Steel column
4. Polochon (GEOPLÂTRE®N+ Fiber Sisal)



INSTALLATION PRINCIPLE

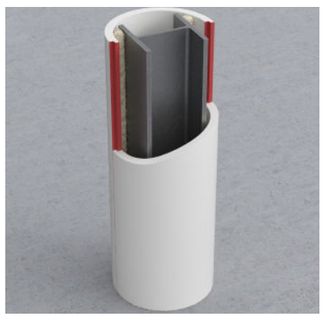
- The diameter of the half-shells is chosen so that there is a minimum gap of 10 mm between the metal profile and the inner wall of the shell.
- Metal sections do not need to be prepared prior to application of the protection.

N°1



At the foot of the post, a bolster is formed inside the half-shells in contact with the ground and the post. On the 1st half-shell installed, two full-height sisal fiber caulking are made between the footings of the steel column and the half-shell.

N°2*



The longitudinal rabbets of the 1st half-shell are coated with GEOCOL® glue, then the 2nd half-shell is placed against the 1st.

N°3

The longitudinal rabbets of the 1st half-shell are coated with GEOCOL® glue, then the 2nd half-shell is placed against the 1st.

N°4

Excess glue on the visible side of the half-shells is smoothed away for a better finish.

This protection can be finished with a water-based acrylic paint, without affecting its fire-resistance performance.

Note :

* If the posts to be protected are taller than the half-shells used (2 or 3 metres in height), GEOFLAM® DC half-shells are installed in several sections. There must be a 400 mm when multiple GEOFLAM DC elements are installed on top of each other (height > 2 or 3 meters) between two half-shells installed opposite each other.