

### General product description

Protecta® FR Collars are designed to maintain the fire resistance of fire rated walls and floors where these are breached by service penetrations, and may be used in drywalls, timber, masonry or concrete walls and floors.

Each collar consists of a white or red coated circular steel shell that splits in two to fit around the service penetrations by means of a simple 'slide-lock' system. The steel shell contains a graphite based reactive material which reacts when exposed to heat from fire closing the openings left by the softening combustible material.

### Properties

- High end fast expanding patented graphite material, certified Worldwide
- Classified for fire sealing all types of constructions such as drywalls, masonry and concrete walls, concrete and composite floors, and solid or cross-laminated timber walls and floors
- Classified for fire sealing all types of building service penetrations such as cable bundles, cable conduits, steel pipes, copper pipes, composite pipes, PVC pipes, PE pipes, ABS pipes, PP pipes and PEX pipe-in-pipes
- Metal and plastic pipes are classified with commonly used elastomeric pipe insulations, continuous through the fire seal
- Approved plastic pipe sizes range from smallest pipes available to Ø 400mm, each with a wide range of pipe wall thicknesses
- Approved with a single collar in some concrete and masonry wall applications, reducing cost
- Collars are available in two different heights for different fire classifications to maximise cost efficiency
- Smaller pipes can be fitted within larger collars with the benefit of accommodating pipes that are at an angle, or if the opening around the pipe is too large
- Fire classifications up to 240 minutes for both integrity and insulation
- Tested and certified for U/U pipe end applications
- Very high sound insulation
- Causes no deleterious effects on cPVC pipes like BlazeMaster, supported by mechanical testing evidence
- No emissions - environmentally and user friendly
- Simple to install using widely available standard fixings
- Unlimited storage time (under correct conditions)
- 30 years working life guarantee

### Sound insulation

Description	Sound reduction
Collars installed as described	Rw 58 dB

The sound insulation value is only valid for the collar/pipe/seal and not for other elements in the building construction.

The sound insulation has been tested by the accredited laboratory Exova BM Trada in Great Britain according to EN ISO 10140-2. Test report is available upon request.



### Pipe end configurations

When testing pipes, one can choose not to cap (or close) the pipe, or cap the pipe inside the furnace, or outside the furnace, or on both sides. The configuration chosen depends on the intended application of the pipe and/or the installation environment.

The code defining if a pipe is capped is stated after the fire classification. For instance EI 60 C/U which means the pipe was capped inside the furnace, and uncapped outside the furnace. The test configuration defines the approvals possible.

Our engineering judgment based on EN 1366-3:2009 are:

Intended use of pipe	Pipe end condition <sup>4)</sup>	
Rainwater pipe, plastic	At drainage	U/U <sup>1)</sup>
	Not at drainage	C/C <sup>2)</sup>
Drainage or sewage pipe, plastic	Ventilated drain	U/U <sup>1)</sup>
	Unventilated drain	U/C <sup>1)</sup>
	Drain w/water trap	U/C <sup>1)</sup>
	Not at drainage	C/C <sup>2)</sup>
Pipe in closed circuit (water, gas, air, electricity etc.)	C/C <sup>2) 3)</sup>	
Flue gas recovery system pipe, plastic	U/C <sup>1)</sup>	
Pipe with open ends and ≥ 50cm length on both sides, plastic	U/U <sup>2)</sup>	
Pipe supported by suspension system, metal	Fire rated support	C/U <sup>1)</sup>
	Non-fire rated	U/C <sup>1)</sup>
Waste disposal shaft pipe, metal	U/C <sup>1)</sup>	

<sup>1)</sup> Suggested in EN 1366-3:2009. <sup>2)</sup> Polyseam's judgment based on tests.

<sup>3)</sup> Metal pipes should have fire rated support. <sup>4)</sup> U/U classified fire seals cover C/U, U/C and C/C. C/U classified fire seals cover U/C and C/C. U/C classified fire seals cover C/C.

### Sizes & packaging

Product code	Product diameter & height	Qty / box
PRO269-30	Protecta FR Collar Ø32 / 30mm	24
PRO269	Protecta FR Collar Ø32 / 50mm	24
PRO270-30	Protecta FR Collar Ø40 / 30mm	24
PRO270	Protecta FR Collar Ø40 / 50mm	24
PRO037-30	Protecta FR Collar Ø55 / 30mm	24
PRO037	Protecta FR Collar Ø55 / 50mm	24
PRO271-30	Protecta FR Collar Ø63 / 30mm	24
PRO271	Protecta FR Collar Ø63 / 50mm	24
PRO272-30	Protecta FR Collar Ø75 / 30mm	24
PRO272	Protecta FR Collar Ø75 / 50mm	24
PRO038-30	Protecta FR Collar Ø82 / 30mm	24
PRO038	Protecta FR Collar Ø82 / 50mm	24
PRO273-30	Protecta FR Collar Ø90 / 30mm	24
PRO273	Protecta FR Collar Ø90 / 50mm	24
PRO039-30	Protecta FR Collar Ø110 / 30mm	24
PRO039	Protecta FR Collar Ø110 / 50mm	24
PRO040	Protecta FR Collar Ø125 / 60mm	20
PRO274	Protecta FR Collar Ø140 / 60mm	12
PRO041	Protecta FR Collar Ø160 / 60mm	12
PRO296	Protecta FR Collar Ø200 / 60mm	2
PRO295	Protecta FR Collar Ø250 / 75mm	2
PRO294	Protecta FR Collar Ø315 / 75mm	2
PRO285	Protecta FR Collar Ø400 / 100mm	1

Collars ≤ Ø 160mm are available in white and red. For red collars -R is added to end of product code.

### Analysis of cPVC Pipes e.g. BlazeMaster

Analysed using Fourier Transform Infrared (FTIR) Spectroscopy; examination of the sealant contact regions of the cPVC pipe after removal of Protecta FR Acrylic (used in combination with Protecta FR Collar) showed no evidence of visible discolouration or changes at the pipe surface.

Protecta® FR Acrylic has also been tested for chemical resistance of a sealant when applied to a cPVC pipe. The sealant does not affect cPVC pipes; the tests showed no difference between the control and exposed results at Yield.

Tested by Intertek, report numbers IWTN/W000009628ARL001 and WTN/W000009628RLM001.

### Technical data

Condition	Ready for use, steel shell with a graphite material
Shell	Powder coated 1mm steel
Conditioning procedure	EN 13238:2010
Expansion ratio	17:1
Expansion pressure	65.4 N
Graphite weight	1.4 kg/m <sup>2</sup> per mm thickness
Graphite density	1409 kg/m <sup>3</sup>
Normal expansion time	Less than 2 minutes
Minimum expansion temperature	105 °C
Durability	Z <sub>2</sub> intended for use in internal conditions with humidity classes other than Z <sub>1</sub> , excluding temperatures below 0 °C.
Life	Under normal conditions; 30 years +
Storage	May be stored for a long period of time. To be stored in temperatures between 5C and 30C
Installation temp.	+5°C to +50°C (sealant)
Colour	White or red shell with anthracite inlay

### Test standards

This Technical Data Sheet and the Installation Instructions are based on the product's European Technical Assessment issued in accordance with regulation (EU) No 305/2011 on the basis of EAD 350454-00-1104, September 2017, tested to EN 1366-3 in conjunction with EN 1363-1.

The product hold the following approval marks:

- CE-mark for Europe
- UL-EU certificate for Asia and South America
- UAE Certificate of Compliance for United Arab Emirates
- AS Assessment for New Zealand and Australia