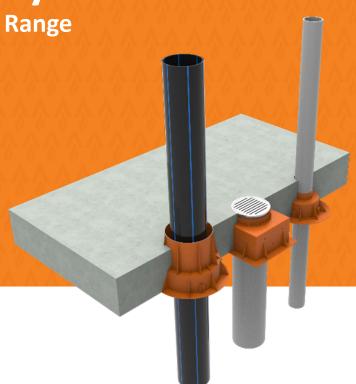




FyreCOLLAR Cast-In



Trafalgar Australian Made fire collars range provide a full range of cast-in fire stopping solutions for use in both stack pipe and floor waste applications, with approvals up to 4 hours across a huge range of common pipe types and sizes.







KEY FEATURES

- Robust, moisture resistant polypropylene casing
- Galvanized steel components
- Simple install
- High and low top options
- Spring loaded floor waste
- Tested to AS1530.4-2014 and AS4072.1
- FyrePLATE adaptor for steel decks



APPLICATIONS

- Cast into the slab during concrete pour.
- Stack and floor waste testing covers a wide range of pipes with fire elbows, S-bends and 4-way risers.
- Numerous plastic pipes
- Copper and steel pipes (with UniGUARD™)
- Insulated pair coil bundles
- Timber or steel deck slabs



TRADES











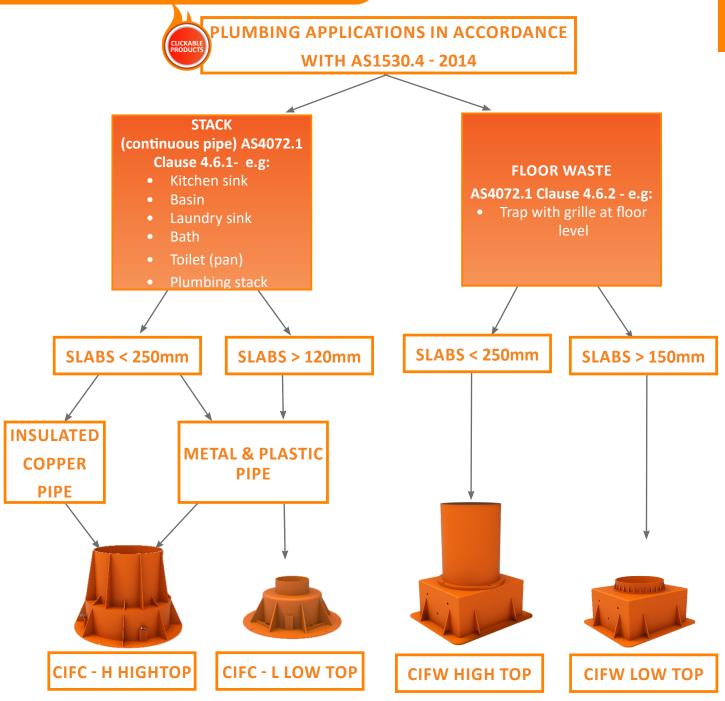
TABLE OF CONTENTS



Sect	tion Page	
Syst	em Selector	3
Plas	tic Stack Pipe Applications	4
Met	al Stack Pipe Applications	5
Floc	r Waste Applications	6
Com	npliance	7
Spe	cifications	8
	Fire Resistance Level	9
es	FyreCOLLAR Floor Waste Approvals	10
FRL Tables	FyreCOLLAR Cast-In Approvals- Stack Pipes	11
罡	FyreCOLLAR Cast-In Approvals - Other Services	12
	Steel Deck- Adapter Plate	13
	High Collars- Steel Formwork	14
Installation	High Collars- Timber Formwork	15
Instal	Low Collars	16
	Floor Waste Collars	17
Upg	rade Works	18
Syst	em Range	19
FAQ		20
	FyreCOLLAR Floor Waste - FW 100 Low Cast-In	21
10	FyreCOLLAR Floor Waste - FW 100 High Cast-In	22
awings	FyreCOLLAR Floor Waste - Typical Installation	23
cal Dr	FyreCOLLAR Cast-in - High Overview	24
Technical Drawings	FyreCOLLAR Cast-in- High	25-27
	FyreCOLLAR Cast-in- Low Overview	28
	FyreCOLLAR Cast-in - Low	29



SYSTEM SELECTOR



Fure COLLAR CAST-IN

Key Features

- Plastic pipes
- Socket inside fire collar
- Copper & steel pipes
- Mixed services

Fure COLLAR FLOOR

Key Features

- P trap
- 4 way riser
- Socket inside fire collar
- Pipe material: PVC, HDPE, dB Blue Raupiano







PLASTIC STACK PIPE APPLICATIONS

STACK PIPES

Stack pipe applications are those where the pipe runs continuously through the slab (drain, waste and vent, DWV).

FyreCOLLAR CAST-IN - LOW

The low cast-in fire collars are suitable for all thickness slabs. These low-profile collars are cast in place with a section of pipe installed before the concrete is poured, for pipework to be connected to once set.

The stack collars are available in set sizes to suit the pipe size:

- 40mm
- 50mm
- 65mm
- 80mm
- 100mm







The FyreCOLLAR Cast-In are suitable for drain, waste and vent pipes. For floor waste applications, refer to the FyreCOLLAR Floor Waste on page 6.

FyreCOLLAR CAST-IN - HIGH

These collars are designed for use in concrete floor slabs up to 250mm thick, where the head of the high cast-in fire collar extends above the surface of the floor so that sections of pipe are not needed as part of the installation process. Once the concrete is set, simply run your plastic or metal pipes through the collars which are fitted with a rubber gasket to prevent smoke leakage through the penetration.

The high cast-in fire collars are available in three sizes each suitable for a range of pipe sizes:

- 40mm-65mm
- 80mm-100mm









METAL STACK PIPE APPLICATIONS

NOW APPROVED FOR METAL PIPES WITH TWRAP™ AND UNIGUARD™

The FyreCOLLAR Cast-In High range are independently fire tested for copper and steel pipes up to 100mm diameter, used in conjunction with the UniGUARD $^{\text{TM}}$ (or TWRAP $^{\text{TM}}$ systems) installed on the top side of the slab to protect against heat transfer through the metal pipe.

The high cast-in fire collars are available in three sizes each suitable for a range of pipe sizes:

- **40-65mm** for 40mm, 50mm and 65mm pipes
- **80-100mm** for 80mm and 100mm pipes

Refer to the approvals section for details, or contact technical@tgroup.com.au





NOW APPROVED FOR PAIR COIL BUNDLES

The FyreCOLLAR Cast-In High range are also fire tested for up to 2 x pair coil bundles with FR insulation and associated cables. This covers -/180/90 wrap free, refer to the approvals in this manual for further details or contact technical@tgroup.com.au.









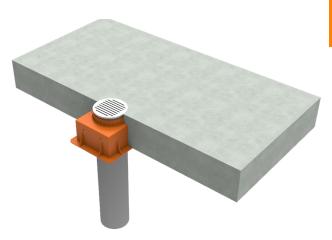
FLOOR WASTE APPLICATIONS

FLOOR WASTE

Floor waste applications are not continuous plastic pipes, this application has a grille finish at the floor level above. Standard intumescent stack collars will not close off the penetration quickly enough to prevent early fire spread!

Trafalgar's FyreCOLLAR Floor Waste is fitted with a spring loaded mechanical system that will shut the plastic pipe early when exposed to fire conditions, to effectively close off the penetration whilst the intumescent material swells to close off any remaining gaps, stopping the spread of fire in this unique application.

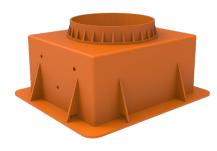




HIGH



LOW



The FyreCOLLAR Floor Waste is available in high and low cast and has been tested for a range of pipe materials connected to 4-way risers and P-traps directly underneath the slab for the following 100mm pipes:

- PVC
- HDPE
- D-Blue







COMPLIANCE



COMPLIANCE WITH THE NATIONAL CONSTRUCTION CODE (NCC)

Fire testing of plastic pipes

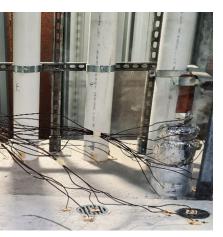
The National Construction Code (NCC) requires all service penetrations be treated in accordance with section C3.15, which in turn calls for the entire penetration system to be fire tested identically to how it is intended to be installed on the building site, in accordance with AS1530.4-2014.

The key to this is that you are installing a system. That comprises of:

- The floor slab thickness
- The type and size of the pipe
- The connecting fittings if present
- Installed in the same configuration (i.e. stack or floor waste).

The tested system must achieve or maintain the FRL of the floor slab (separating element) that it is installed into.

It is important to note that floor waste applications require testing for this specific configuration, with all components such as puddle flanges and floor grates. Conversely, stack pipe testing is done with 2 meters of pipework installed above the slab.





ASSESSMENT REPORTS AND AS4072.1

The NCC clause C3.15 also allows for the registered testing authorities to write reports based off the AS1530.4 fire testing data that allow for small variations in accordance with AS4072.1 which has strict requirements for how much base-line data is needed before any variations can be written against plastic pipes.

Assessment reports are a handy way of summarising lots of test reports into one document for easy compliance, and the testing laboratories can allow for a range of different pipes sizes in-between the smallest and largest, if the full range of sizes has been tested with PVC pipes.

For a copy of the FyreCOLLAR Cast-In range test and assessment reports, contact Trafalgar Fire Technical Team at technical@tgroup.com.au or call 1800 888 714.







HIGH

SPECIFICATIONS









100mm FyreCOLLAR CISC-H80-100

LOW



40mm FyreCOLLAR CISC-L40



50mm FyreCOLLAR CISC-L50



65mm FyreCOLLAR CISC-L65



80mm FyreCOLLAR CISC-L80



100mm FyreCOLLAR CISC-L100

FyreCOLLAR CAST-IN RANGE

Specification	Detail
Casting material	Injection molded, moisture resistant PP
Metal components	Galvanised or Stainless Steel
Intumescent	High grade expansion
Rubber seal/gasket	Included
Sizes – High Cast	To suit pipes 40-65, 80-100
Sizes – Low Cast	To suit pipes 40, 50, 65, 80 & 100mm
Dimensions	Refer to technical drawings on page 19-25

Fyre COLLAR FLOOR

FyreCollar Floor Wasteral Specification Detail Casting material Injection molded, moisture resistant PP Metal components/ springs Intumescent High grade expansion Rubber seal/gasket Not required, tight fitting neck Sizes – High To suit 100mm pipes Sizes – Low To suit 100mm pipes Dimensions Refer to technical drawings on page 19-21.

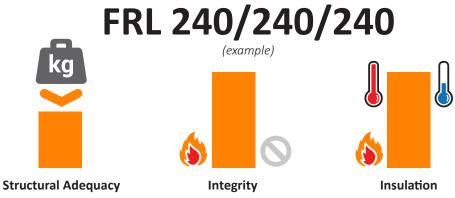




FIRE RESISTANCE LEVEL

FIRE RATING – HOW IS FIRE PERFORMANCE MEASURED?

An FRL (fire resistance level) is a handy way of summarising the performance of a building element. It consists of 3 numbers, all given in minutes:



The ability of the building element to support the weight of adjacent building elements.

ie: a brick wall supporting a concrete floor slab above.

The ability of an element to prevent the passage of flames and hot gasses.

ie: a plasterboard wall remaining intact and not allowing holes to form.

The ability of an element to resist heat transfer from the exposed face to the unexposed face.

ie: a bundle of cables remaining below a set temperature limit on the unexposed side of the wall penetration system.

Penetrations are not required to have a Structural Adequacy rating and is usually expressed as a dash. For example, a penetration through a 4-hour load bearing wall would be written as -/240/240.

INTEGRITY

The FyreCOLLAR range system will achieve the integrity performance for up to 4 hours physically stopping the direct spread of fire, however the insulation performance of the penetration will be limited to concrete slab and conductivity of the services in the penetration.

INSULATION (TEMPERATURE RISE)

Heat transfer via conduction (or heat rise) is limited through cast-in collar systems. The concrete floor slab can absorb much of the heat, and plastic pipe services are not thermally conductive, reducing heat to transfer down the length of a service penetration and do not require additional wrapping or treatment for heat rise.

However, the FyreCOLLAR Cast-in - High is approved for some metallic services such as pair-coil and copper pipes. In these cases, additional treatment is needed to prevent heat rise. UniGUARD™ or TWRAP™ can be used to achieve the full 2 hours of insulation performance, refer to the tables below for specific details.





FLOOR WASTE PIPES



FyreCOLLAR FLOOR WASTE



Service Types*	Nominal size (mm)	Min Slab Thickness (mm)	FRL (up to) when installed with puddle flanges and metal floor grates*	
PVC	100			
HDPE	100	1. Min. 150mm	1/180/180	
Raupiano	110	2. Min. 175mm	2/240/240	
dBlue	110			

^{*}For full FRL details on installation types, please refer to the FyreCOLLAR Floor Waste technical manual





Floor waste applications often have s-traps, p-traps, and 4-way risers often present close to or even within the fire collars. It is important to note that fittings may be present within the collar but for a lower FRL. FyreCOLLAR Floor Waste has been tested specifically for these applications, to ensure the broadest range of approvals to cover all common plumbing applications as per above images and approvals.





STACK PIPES

FyreCOLLAR CAST-IN HIGH AND LOW



Pipe type	Size	FyreCOLLAR Cast-In Size		FyreCOLLAR Cast-In Size		Min slab	FRL
	(mm, nominal)	High Cast	Low Cast	thickness (mm)			
	40		CLC-40		1/180/180 2/240/240		
	50	CHC40-65	CLC-50				
PVC/	65		CLC-65	1. Min. 150mm			
UPVC*	80		CLC-80				
	90	CHC80-100	-				
	100		CLC-100				
	50	CUCAO CE	CLC-50		CLC EO	2. Min. 175mm	
	56				1/180/180 2/240/240		
HDPE	60	CHC40-65	CLC-65				
חטרב	75		CLC-65				
	90	CHC80-100	-				
	100	CHC80-100	CLC-100				

^{*}PVC pipe sockets/elbows have been fire tested pushed up inside the collar housings for maximum clearance.





OTHER SERVICES

FyreCOLLAR CAST-IN HIGH APPROVALS



PAIR COIL

Service Types	Nominal size (mm)	Collar option	Min Slab Thickness (mm)	Insulation System	FRL (up to)	
AC Service Bundle – 1 x Pair	9 & 19mm copper pipes		CHC 40-65		300mm TWrap	-/180/120
coil	and associated cables		150mm or 175mm		-/180/90	
AC Service Bundle – 2 x Pair coil	9 & 19mm copper pipes with 19mm FR Insulation and associated cables	CHC 80-100		-	-/ 100/90	

METAL PIPES

Service Types	Nominal size (mm)	Min Slab Thickness (mm)	Insulation System	FRL (up to)
Copper Pipe	DN 50	150mm or 175mm	TWRAP™ 300mm	-/240/120
Copper Pipe (Type B)	DN 100	150mm or 175mm	UniGUARD™ 600mm	-/240/120

^{*}For full FRL details on installation types, please refer to the UniGUARD Technical Manual



The UniGUARD™ is a 600mm tall insulation designed as a replacement for traditional wrap systems for large copper pipes (100 and 150mm). Where large lengths and sometimes multiple layers of insulation wrap are sometimes required for these pipes, the UniGUARD™ can be instead used as an easy substitute. It is shipped flat-packed for simple transport and storage and can be rolled and retrofit around the services on site. The above approval for cast-in collars is just one of many applications the UniGUARD™ is suitable for. Check the UniGUARD™ Technical Manual or contact technical@tgroup.com.au for more information.





STEEL DECK

ADAPTOR PLATE



Traditionally, cast-in collars are nailed down to the formwork before the slab is poured, this can cause issues for permanent metal deck systems such as Bondek, Truedek, Kingflor, etc. There isn't enough flat space to mount a collar, and the location of the required service may fall on a tricky spot on the deck.

For these situations Trafalgar have a fire tested solution; the **FyrePLATE** is an adaptor for the FyreCOLLAR Cast-in High top system that will suit any steel deck system with a profile up to 70mm deep, and can locate the service in any required position in the deck.

Approval Specifications					
Approved Collars	FyreCOLLAR Cast-in High Top				
Approved Services	PVC pipes up to 100mmHDPE Pipes 100mm				
Approved Steel Deck Types	Any deck with a profile up to 70mm deep.				

FIRE RESISTANCE LEVELS

Service Types	Specification	Fire Rating	Test Report
DVC	Up to 100mm	-/180/180	
PVC	40mm	-/180/180	FRT 220258
Up to 100mm HDPE	100mm	-/180/180	

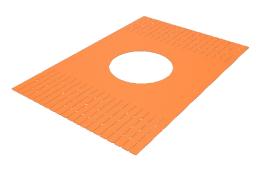






INSTALLATION-STEEL FORMWORK

HIGH COLLARS-WITH FYREPLATE





Locate required service positioning and cut a square hole in the deck with 140-150mm sides.



Bend the FyrePLATE to suit the deck profile and fit it over the cut-out in the deck.

The FyrePLATE adaptor can be sofit in any location on any steel deck, with a profile up to 70mm tall.



Fix the FyrePLATE to the deck using 4 x tek screws and use reinforced foil tape to cover any gaps >5mm to reduce concrete ingress.



At this stage the system is ready for the concrete to be poured, the pipes can be run through the collar before or after this happens. Follow the installation steps in this manual for installation of the pipe.



INSTALLATION-TIMBER FORMWORK

HIGH COLLARS

PREPARE

Fix the collar in place to the form work ensuring appropriate separation. The collar flanges can be butting up against one another, but not overlapping.

POUR SLAB



Pour the concrete slab, ensuring the collars remain firmly in place.

The FyreCOLLAR Range is approved for use in BONDEK slabs. Simply cut away the section of BONDEK steel where the collar will sit before fitting the collar in place and pouring the slab.

OPTIONAL

(1)



If desired, the collar can be cut flush with the top side of the slab, otherwise it can be left as is (PVC pipes only). Install the pipe/service, ensuring it is approved for the required FRL, as listed in this manual on pages 10-12.

SEAL



Once the slab is cured, connect the pipe/service, ensuring it is approved for the required FRL, as listed in this manual. Support as appropriate.





INSTALLATION

LOW COLLARS



Fix the collar in place to the form work ensuring 50mm separation from edge to edge between each collar.

INSERT PIPE



To ensure concrete does not fill into the collars, install a pipe former to the collar.

Cast-in and Floor Waste Collars can be supplied as a High format, where there is no need to pre-install a section of pipe.

POUR SLAB

Pour the concrete slab, ensuring the collars remain firmly in place.

SERVICES & SUPPORTS



Once the slab is cured, connect the pipe/service, ensuring it is approved for the required FRL, as listed in this manual. Support as appropriate.





INSTALLATION

FLOOR WASTE COLLARS



Fix the collar in place to the form work ensuring 50mm separation from edge to edge between each collar.

INSERT PIPE



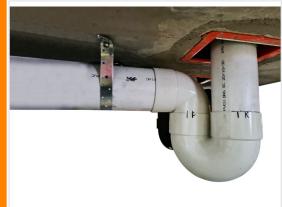
To ensure concrete does not fill into the collars, install a pipe former to the collar.

Cast-in and Floor Waste Collars can be supplied as a High format, where there is no need to pre-install a section of pipe.

POUR SLAB

Pour the concrete slab, ensuring the collars remain firmly in place.

SERVICES & SUPPORTS



Once the slab is cured, the pipe formers can be gently tapped downwards to allow for connection of the pipe/service, ensuring it is approved for the required FRL, as listed in this manual.



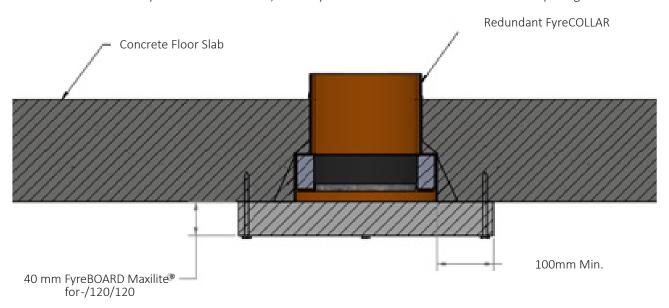


UPGRADE WORKS

It is common on site to come across services that are not approved for the collar, the wrong size for the collar, or redundant collars that don't have any service running through it. Naturally in these scenarios, the FRL of the floor slab still needs to be maintained. Trafalgar Fire have a range of solutions for these instances.

1 - REDUNDANT COLLAR

For redundant collars, simply fix <u>FyreBOARD Maxilite</u>® to either the top or bottom side of the slab to the below specification. This method works for any size or brand of collar, as the FyreBOARD Maxilite® board blanks off the opening.



2 - WRONG SERVICE

Where a non-compliant service is installed into a cast-in fire collar, a retro-fit solution must now be put in place to maintain the FRL of the barrier. Refer to the below table for a summary of retrofit solutions for common services.

Non-Compliant Service	ompliant Service Retro-fit Fire Stopping	
Plastic Service (incorrect size for the collar)	60mm FyreBOARD Maxilite® to the underside of the slab and a retro-fit FyreCOLLAR	FyreCOLLAR Technical Manual
Electrical Cable Bundle	60mm FyreBOARD Maxilite® to the top side of the slab, FyreFLEX® sealant and TWRAP™	FyreFLEX® Sealant Technical Manual for Electricians
Copper or Steel Pipe (DN100 only)	Seal pipe with FyreFLEX® sealant on the top side (10mm backfill) and install a UniGUARD™ to the top side	<u>UniGUARD™</u> <u>Technical Manual</u>
Copper or Steel Pipe (all other sizes)	60mm FyreBOARD Maxilite® on the top side, FyreFLEX® sealant and TWRAP™	FyreFLEX® Sealant Technical Manual for Plumbers

For any other service types, contact <u>technical@tgroup.com.au</u> for the best way to fire rate the penetration.







SYSTEM RANGE

Fure COLLAR CAST-IN

Fure COLLAR CAST-IN





65mm FyreCOLLAR CISC-H40-65

100mm FyreCOLLAR CISC-H80-100

Item Number	Description	Min Order Qty	Pallet QTY
FyreCOLLAR CISC-H40-65	FyreCOLLAR Cast-In High 40-65mm	1	-
FyreCOLLAR CISC-H80-100	FyreCOLLAR Cast-In High 80-100mm	1	-

LOW









100mm

FyreCOLLAR CISC-L50

FyreCOLLAR CISC-L65

FyreCOLLAR CISC-L80

FyreCOLLAR CISC-L100

	[®] Fyr€ COLLAR cast-in	FyreCOLLAR CISC-L40	FyreCOLLAR CISC-L50	FyreCOLLAR CISC-L65	FyreCOLLAR CISC-L80	FyreCOLLAR CISC-L100
J	Item Number		Description		Min Order Qty	Pallet QTY
	FyreCOLLAR CISC-L40	FyreCOLLAR Cast-In Low 40mm			1	-
	FyreCOLLAR CISC-L50	FyreCOLLAR Cast-In Low 50mm			1	-
	FyreCOLLAR CISC-L65	FyreCOLLAR Cast-In Low 65mm			1	-
	FyreCOLLAR CISC-L80	FyreCOLLAR Cast-In Low 80mm			1	-
	FyreCOLLAR CISC-L100	FyreCC	LLAR Cast-In Low 1	.00mm	1	-

FLOOR WASTE











	Item Number	Description	Min Order Qty	Pallet QTY	
	FyreCOLLAR CIFWC-100	FyreCOLLAR Floor Waste 100mm	1	-	
	FyreCOLLAR CIFWC-H100	FyreCOLLAR Floor Waste High 100mm	1	-	

SYSTEM COMPONENTS

CLICKABLE	Item Number	Description	Min Order Qty	Pallet QTY
	UniGUARD	600 x 690 x 0.6mm Powder Coated Orange	1	-
	FyrePLATE		1	-
	TWRAP 300	300mm wide, 25mm thick blanket	7620mm long roll	24
	FyreFLEX 600W FyreFLEX 600G	FyreFLEX® Sealant Sausage 600ml White or Grey	1	1040







FAQ

Q Can I backfill a redundant (unused) FyreCOLLAR Cast-In with concrete to maintain the FRL?

A No, this runs the risk of the collar plastic melting in a fire and the back-filled concrete slipping out. FyreBOARD Maxilite® can be used, refer to page 16.

Q Can I use a bigger collar for a smaller pipe?

A Collars can cover a range of sizes as specified on page 17. Otherwise, the pipe must be the correct size per the approvals tables in this manual. If you have already run a smaller pipe than what is approved, refer to page 16.

Q Why would you use low cast over a high cast collar, or vice versa?

A The advantage of the high-cast collar is that no pipe formers need to be used when pouring the slab. This is required for the low-cast collar however it is sometimes preferable to use a low-profile collar.

Q How far apart do the cast-in collars have to be? Can I overlap the flanges?

A The collar flanges must be at least 40mm away from other Trafalgar Cast-in collars, or 200mm away from other fire stopping systems.



SOCIAL MEDIA

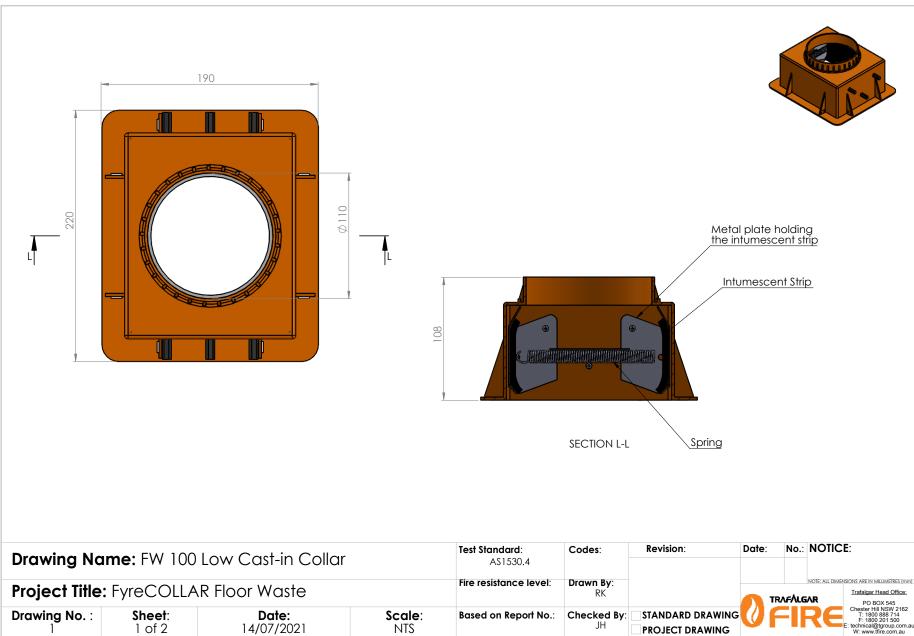






Fure COLLAR CAST-IN

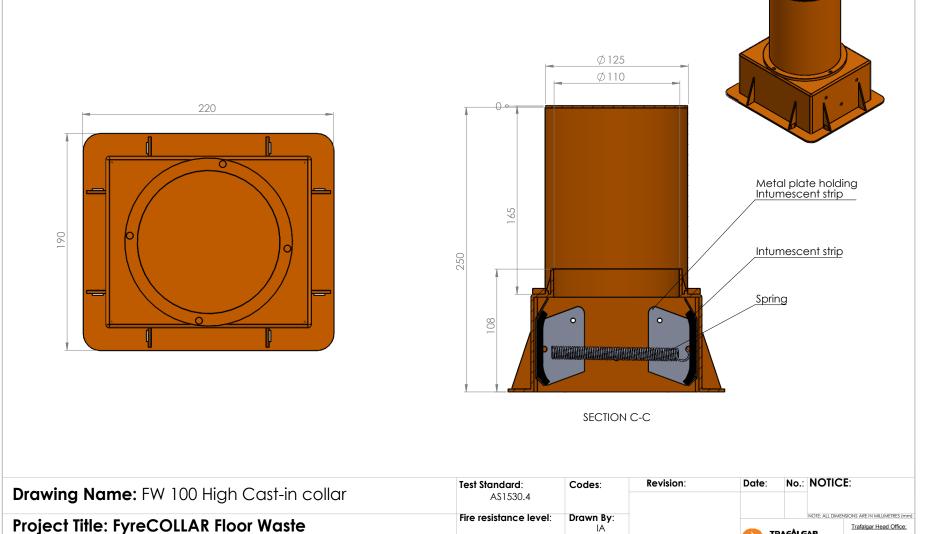






COLLAR CAST-IN





Top hat to be cut on site



Drawing No.:

Sheet:

1 of 1

Date:

13/08/2021

Trafalgar Head Office:

TRAFÅLGAR

Based on Report No.:

Checked By:

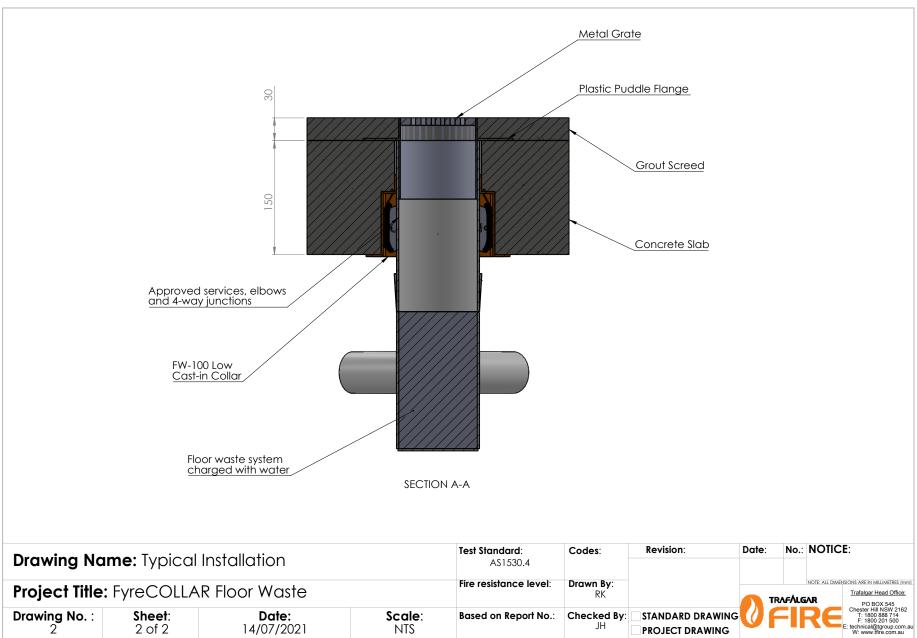
STANDARD DRAWING

PROJECT DRAWING

Scale:

NTS

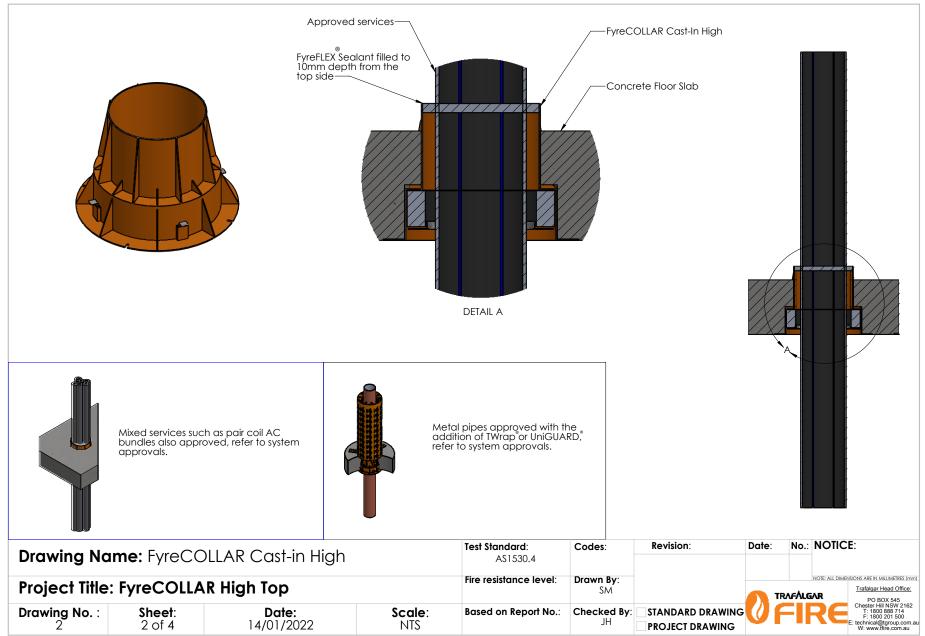






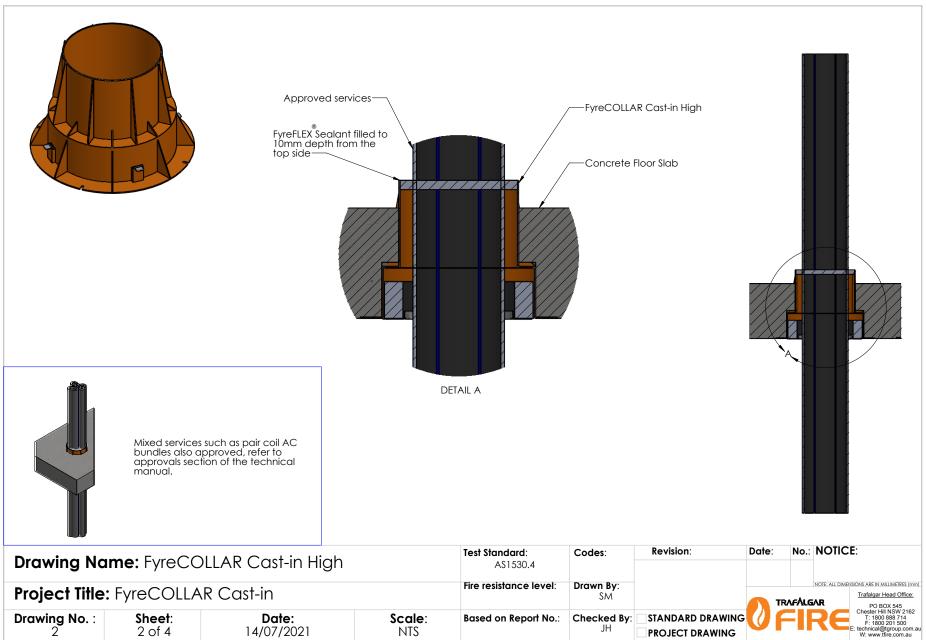
Fure COLLAR CAST-IN



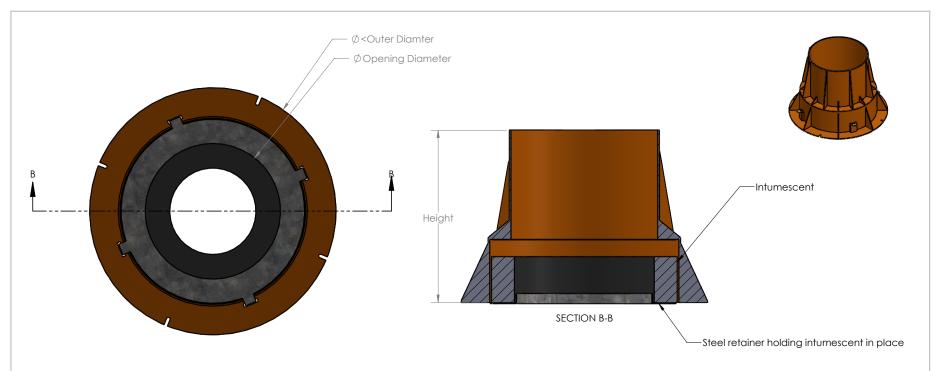










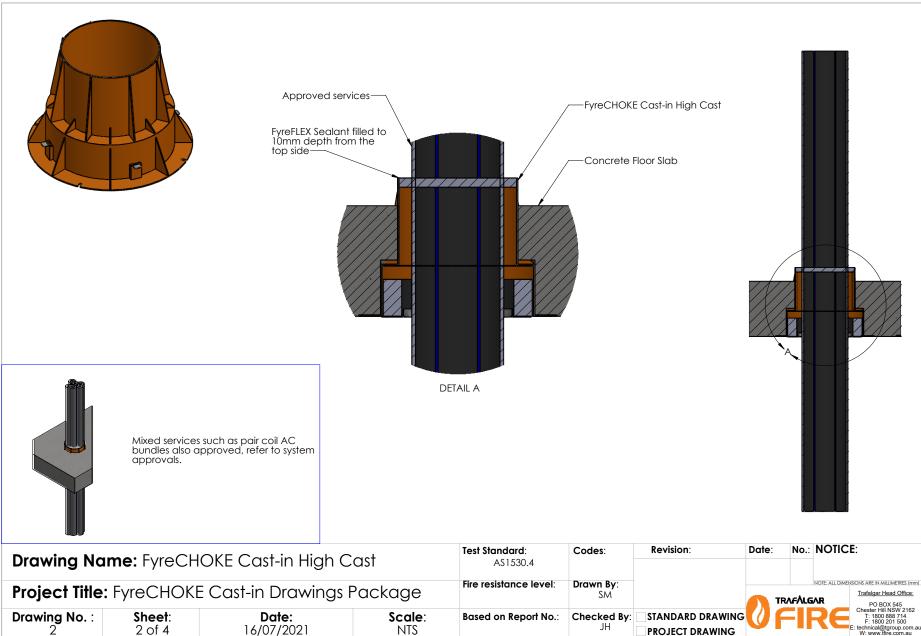


Collar	Collar Outer diameter		Height		
CHC 40-65	162mm	107mm	250mm		
CHC 80-100	215mm	160mm	250mm		
CHC 150	305mm	235mm	250mm		

Drawing Name: FyreCHOKE High Cast Overview				Test Standard: AS1530.4	Codes:	Revision:	Date:	No.:	D.: NOTICE:		
Project Title: FyreCHOKE Cast-in Drawings Package				Fire resistance level:	Drawn By: SM		TF	ιλελισ	PO BOX 545		
Drawing No. :	Sheet : 1 of 4	Date: 16/07/2021	Scale: NTS	Based on Report No.:	Checked By:	STANDARD DRAWING	Vf		Chester Hill NSW 2162 T: 1800 888 714 F: 1800 201 500 E: technical@tgroup.com.au W: www.tfire.com.au		



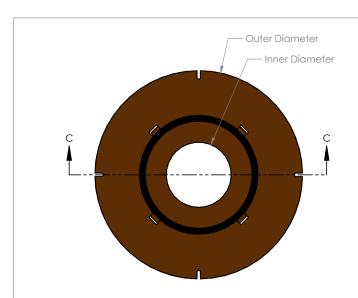


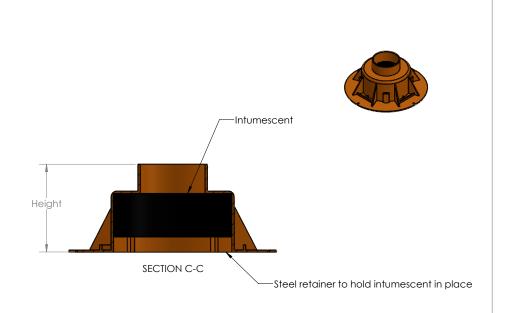




Fure COLLAR CAST-IN







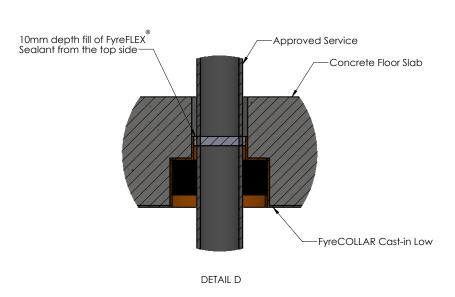
Collar	Outer Diameter	Inner Diameter	Height		
CLC40	162mm	107mm	80mm		
CLC50	162mm	107mm	80mm		
CLC65	162mm	107mm	80mm		
CLC80	215mm	160mm	80mm		
CLC100	215mm	160mm	80mm		

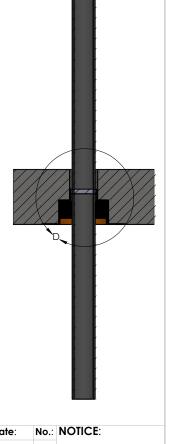
Drawing Name: FyreCOLLAR Cast-In Low Overview			Test Standard: AS1530.4	Codes:	Revision:	Date:	No.:	NOTICE:		
Project Title: FyreCOLLAR Cast-in			Fire resistance level:	Drawn By: SM		TRAFÁLGAR PO BOX 54			Trafalgar Head Office: PO BOX 545	
Drawing No. :	Sheet : 3 of 4	Date: 14/07/2021	Scale: NTS	Based on Report No.:	Checked By:	STANDARD DRAWING PROJECT DRAWING	Uf	-11	₹€	Chester Hill NSW 2162 T: 1800 888 714 F: 1800 201 500 E: technical@tgroup.com.au W: www.tfire.com.au











Drawing Name: FyreCOLLAR Cast-in Low				Test Standard: AS1530.4	Codes:	Revision:	Date:		NOTICE:
Project Title: FyreCOLLAR Cast-in			Fire resistance level:	Drawn By: SM		● TR	νεγια	PU BUX 343	
Drawing No.:	Sheet : 4 of 4	Date: 14/07/2021	Scale : NTS	Based on Report No.:	Checked By:	STANDARD DRAWING PROJECT DRAWING	UF		Chester Hill NSW 2162 T: 1800 888 714 F: 1800 201 500 E: technical@tgroup.com. W: www.tfire.com.au

