

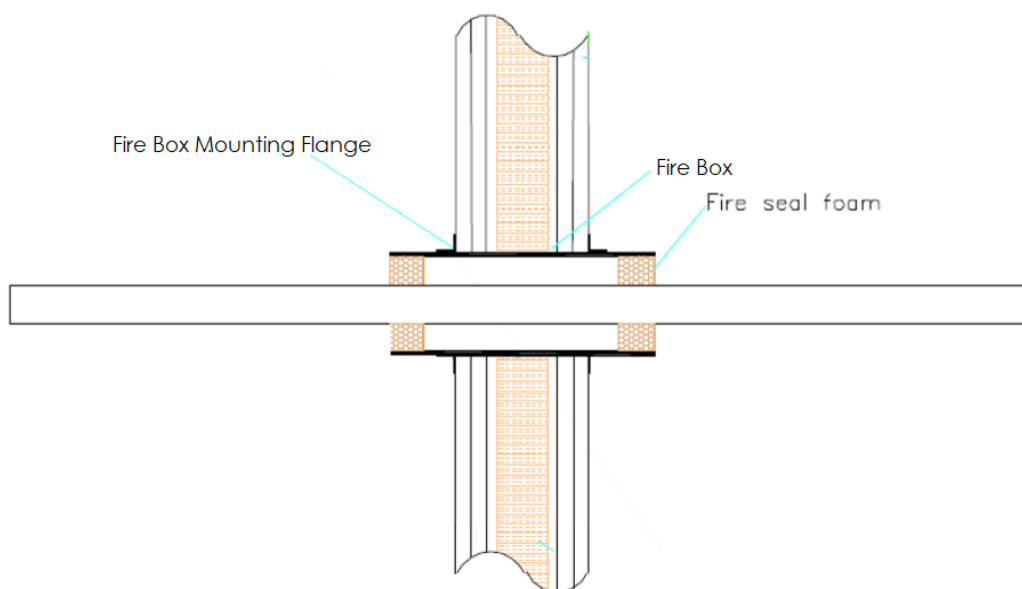
ANNEX A – Resistance to Fire Classification – Fire Box

A.1 Flexible or rigid wall constructions with wall thickness of minimum 100 mm

A.1.1 Fire Box penetration seal in flexible or rigid walls min. 100 mm thick

Penetration Seal: Cables fitted through single Fire Box of dimensions, 125 x 125 mm to 1100 x 125 mm. Maximum 60% cable fill. Fire Box has no external insulation material.

Construction details:



A.1.1.1

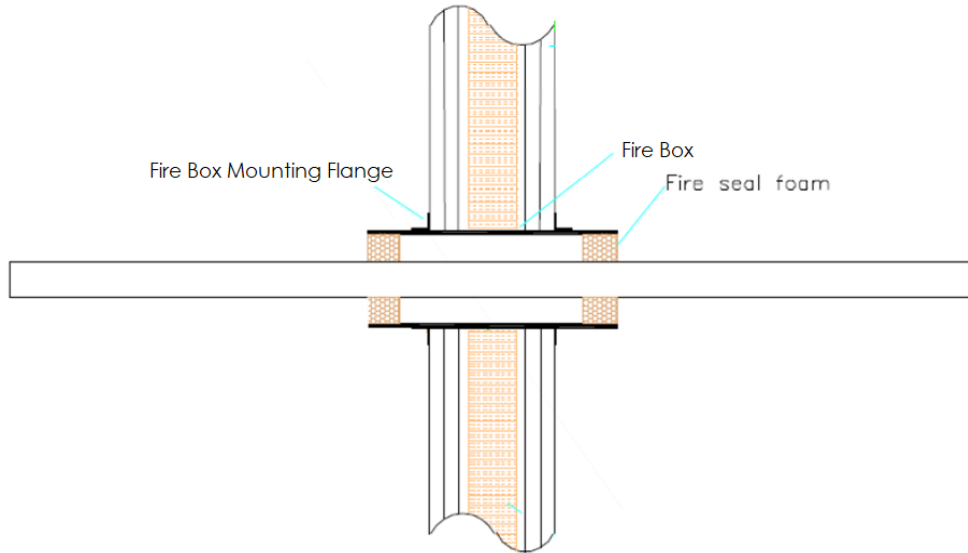
Services	Service Insulation	Classification
Electrical cables up to 80 mm diameter, single or in a bundle	None	E 120, EI 30
Electrical cables up to 80 mm diameter, single or in a bundle	300 mm long insulwrap to services, 5 mm thick	E 120, EI 60
Up to 21 mm diameter telecoms , single or in bundles up to 100 mm diameter	None	E 120, EI 60
Unsheathed wire up to 24 mm diameter	None	E 120, EI 30
	300 mm long insulwrap to services, 5 mm thick	E 120, EI 60

Specific cables	Service Insulation	Classification
Type C2, C3, D1, D2 electrical cables, single or in a bundle	None	E 120, EI 45
Type A1, A2, C1, A3 electrical cables, single or in a bundle		E 120, EI 60

A.1.2 Fire Box penetration seal in flexible or rigid walls min. 100 mm thick

Penetration Seal: Cables fitted through single Fire Box of dimensions, 65 x 65 mm to 102 x 102 mm and 50 to 100 mm diameter. Maximum 60% cable fill. Fire Box has no external insulation material.

Construction details:



A.1.2.1

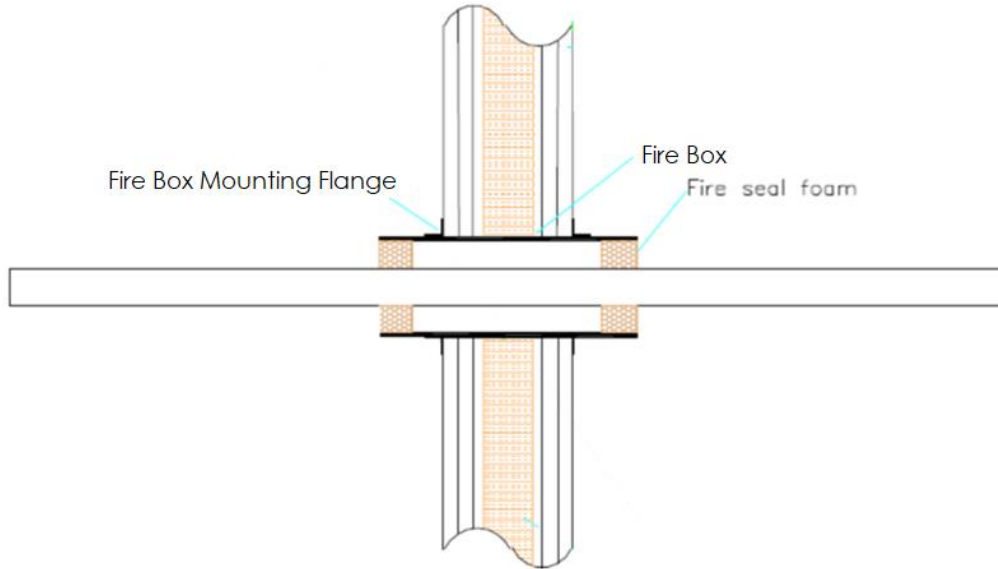
Services	Service Insulation	Classification
Electrical cables up to 80 mm diameter, single or in a bundle, Unsheathed wire up to 24 mm diameter	None	E 120, EI 30
Up to 21 mm diameter telecoms , single or in bundles up to 100 mm diameter		E 120, EI 60
Electrical cables up to 80 mm diameter, single or in a bundle, unsheathed wire up to 24 mm diameter	300 mm long insulwrap to services, 5 mm thick	E 120 U/U, C/U, U/C, CC EI 60 U/U, C/U, U/C, CC
82mm dia. x 3.2mm wall PVC Pipe to EN 1329-1, EN 1453-1 or EN 1452-1	None	
54mm dia. Copper Pipe	19 mm Armaflex CS or K-Flex ST	E 120 U/U EI 60 U/U

Specific cables	Service Insulation	Classification
Type C2, D1, D2 electrical cables, single or in a bundle	None	E 120, EI 45
Type A1, C1, D3, A3 electrical cables, single or in a bundle		E 120, EI 60
Type C2, C3, E, D1, D2 electrical cables, single or in a bundle	300 mm long insulwrap to services, 5 mm thick	

A.1.3 Fire Box penetration seal in flexible or rigid walls min. 100 mm thick

Penetration Seal: Cables fitted through single Fire Box of dimensions, 125 x 125 mm to 1100 x 125 mm. Maximum 60% cable fill. Exposed surfaces of Fire Box insulated with 5 mm thick insulwrap.

Construction details:



A.1.3.1

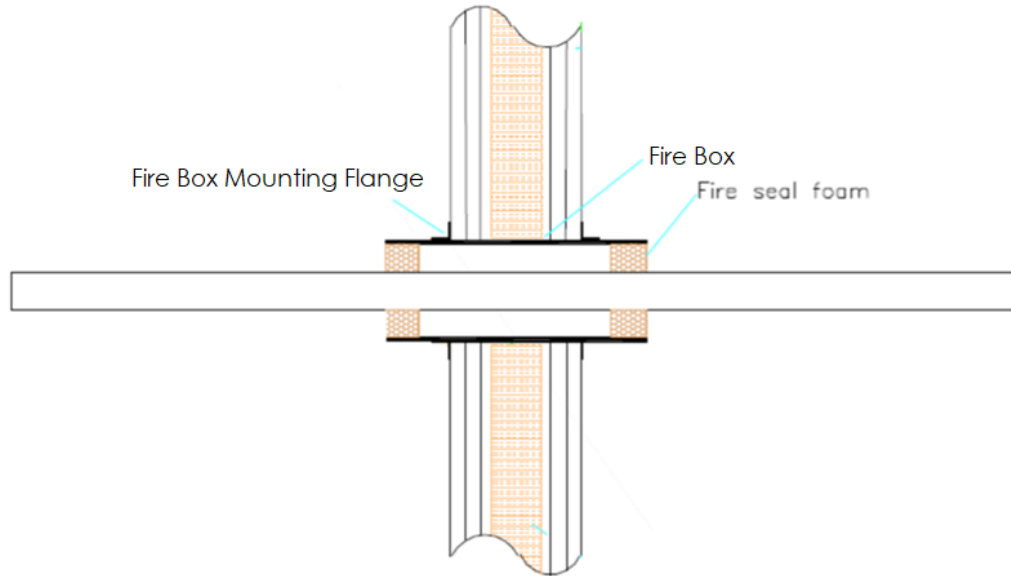
Services	Insulation	Classification
Electrical cables up to 80 mm diameter, single or in a bundle	None	E 120, EI 30
Electrical cables 22 to 80 mm diameter, single or in a bundle	300 mm long insulwrap to services, 5 mm thick	E 120, EI 90
Electrical cables up to 21 mm diameter, single or in a bundle		EI 120
Up to 21 mm diameter telecom cables, single or in bundles up to 100 mm diameter	None	E120, EI 90
Unsheathed wire up to 24 mm diameter	None	E 120, EI 30
	300 mm long insulwrap to services, 5 mm thick	E 120, EI 60

Specific cables	Insulation	Classification
Type C2, C3, D1 or D2 electrical cables, single or in a bundle	None	E120, EI 45
Type A1, A2, D3 or C1 electrical cables, single or in a bundle		E120, EI 60
Type A3 electrical cables, single or in a bundle		E120, EI 90
Type E or D2 electrical cables, single or in a bundle	300 mm long insulwrap to services, 5 mm thick	EI 120

A.1.4 Fire Box penetration seal in flexible or rigid walls min. 100 mm thick

Penetration Seal: Cables fitted through single Fire Box of dimensions, 65 x 65 mm to 102 x 102 mm and 50 to 100 mm diameter. Exposed surfaces of Fire Box insulated with 5 mm thick insulwrap.

Construction details:



A.1.4.1

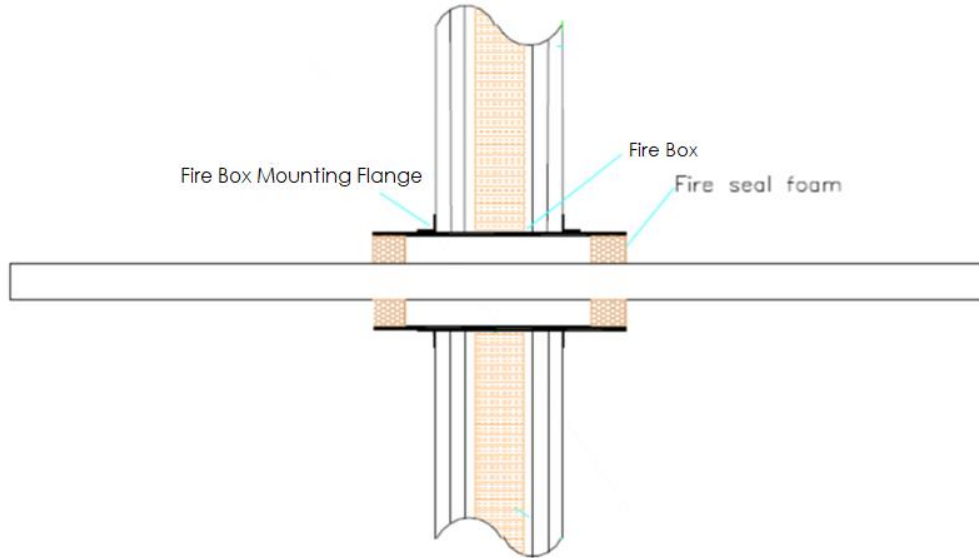
Services	Service Insulation	Classification
Electrical cables up to 80 mm diameter, single or in a bundle	None	E 120, EI 30
Electrical cables up to 80 mm diameter, single or in a bundle	300 mm long insulwrap to services, 5 mm thick	EI 120
Up to 21 mm diameter telecom cables, single or in bundles up to 100 mm diameter	None	E120, EI 90
Unsheathed wire up to 24 mm diameter	None	E 120, EI 30
	300 mm long insulwrap to services, 5 mm thick	E 120, EI 60
82mm dia. x 3.2mm wall PVC Pipe to EN 1329-1, EN 1453-1 or EN 1452-1	None	E 120 U/U, C/U, U/C, CC EI 90 U/U, C/U, U/C, CC
54mm dia. Copper Pipe	19 mm Armaflex CS or K-Flex ST	E 120 U/U EI 90 U/U

Specific cables	Service Insulation	Classification
Type C2, C3, D1 or D2 electrical cables, single or in a bundle	None	E120, EI 45
Type A1, A2, D3 or C1 electrical cables, single or in a bundle		E120, EI 60
Type A3 electrical cables, single or in a bundle		E120, EI 90

A.1.5 Fire Box penetration seal in flexible or rigid walls min. 100 mm thick

Penetration Seal: Cables fitted through ganged Fire Box of dimensions, 65 x 65 mm to 102 x 102 mm. Maximum 60% cable fill. Fire Box has no external insulation material.

Construction details:



A.1.5.1

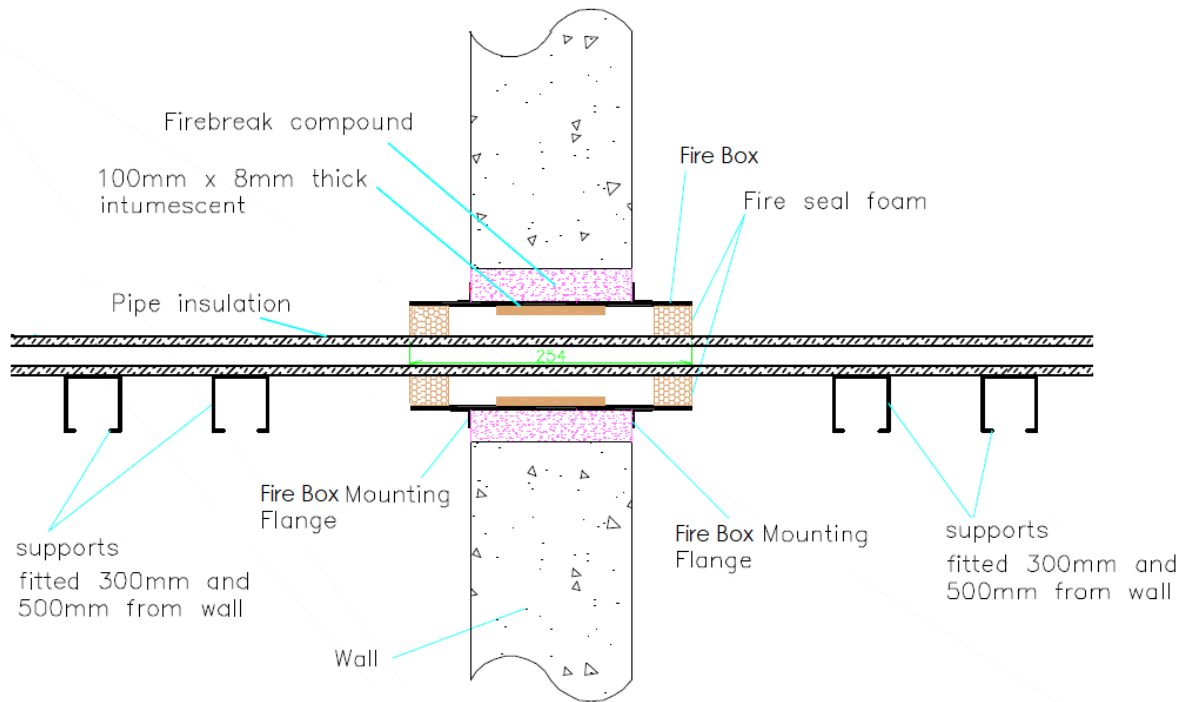
Services	Service Insulation	Classification
Type D3 electrical cables, single	None	E 120, EI 20
Up to 21 mm diameter telecoms , single or in bundles up to 100 mm diameter		
Unsheathed wire up to 24 mm diameter		E 90, EI 20
82mm dia. x 3.2mm wall PVC Pipe to EN 1329-1, EN 1453-1 or EN 1452-1	19 mm Armaflex CS or K-Flex ST	E 120 U/U, C/U, U/C, CC EI 20 U/U, C/U, U/C, CC
54mm dia. Copper Pipe		E 120 U/U EI 20 U/U

A.2 Fire Box penetration seal in rigid walls min. 100 mm thick

A.2.1 Penetration seals, in concrete walls

Penetration Seal: Metal pipes fitted through single Fire Box of dimensions, 125 x 125 mm to 1100mm long x 125mm wide x 254mm deep. Maximum 60% service fill. Fire Box fitted with 50mm foam plugs to both sides and mortared in with 100 mm thick Firebreak compound to all voids around the device

Construction details:



A.2.1.1

Services	Insulation	Classification
Steel pipes 10 mm diameter / 1.0-14.2 mm wall	6 to 19 mm K-flex ST or Armaflex insulation (CS)	E 240 C/C, EI 90 C/C
Steel pipes 25 mm diameter / 1.2-14.2 mm wall	9 to 25 mm K-flex ST or Armaflex insulation (CS)	E 240 C/C, EI 60 C/C
Steel pipes 25 mm diameter / 1.2-14.2 mm wall	25 mm K-flex ST or Armaflex insulation (CS)	E 240 C/C, EI 120 C/C
Steel pipes 25 mm diameter / 1.2-14.2 mm wall	13 to 25 mm K-flex ST or Armaflex insulation (CS)	E 240 C/C, EI 90 C/C
Steel pipes 40 mm diameter / 1.5-14.2 mm wall	13 to 40 mm K-flex ST or Armaflex insulation (CS)	E 240 C/C, EI 120 C/C
Steel pipes 40 mm diameter / 1.5-14.2 mm wall	25 to 40 mm K-flex ST or Armaflex insulation (CS)	E 240 C/C, EI 180 C/C
Steel pipes 63.5 mm diameter / 1.6-14.2 mm wall	9 to 32 mm K-flex ST or Armaflex insulation (CS)	E 240 C/C, EI 60 C/C
Steel pipes 63.5 mm diameter / 1.6-14.2 mm wall	13-32 mm K-flex ST or Armaflex insulation (CS)	E 240 C/C, EI 90 C/C
Steel pipes 63.5 mm diameter / 1.6-14.2 mm wall	19-32 mm K-flex ST or Armaflex insulation (CS)	E 240 C/C, EI 120 C/C
Steel pipes 63.5 mm diameter / 1.6-14.2 mm wall	32 mm K-flex ST or Armaflex insulation (CS)	E 240 C/C, EI 180 C/C
Steel pipes 88.9 mm diameter / 1.6-14.2 mm wall	13 mm K-flex ST or Armaflex insulation (CS)	E 240 C/C, EI 90 C/C
Copper pipes 10 mm diameter / 1.2-14.2 mm wall	6 mm K-flex ST or Armaflex insulation (CS)	E 240 C/C, EI 90 C/C
Copper pipes 28 mm diameter / 1.5-14.2 mm wall	9 mm K-flex ST or Armaflex insulation (CS)	E 240 C/C, EI 90 C/C
Copper pipes 42 mm diameter / 1.5-14.2 mm wall	13 to 40 mm K-flex ST or Armaflex insulation (CS)	E 240 C/C, EI 90 C/C
Copper pipes 42 mm diameter / 1.5-14.2 mm wall	19 to 40 mm K-flex ST or Armaflex insulation (CS)	E 240 C/C, EI 120 C/C
Copper pipes 42 mm diameter / 1.5-14.2 mm wall	32-40 mm K-flex ST or Armaflex insulation (CS)	E 240 C/C, EI 180 C/C

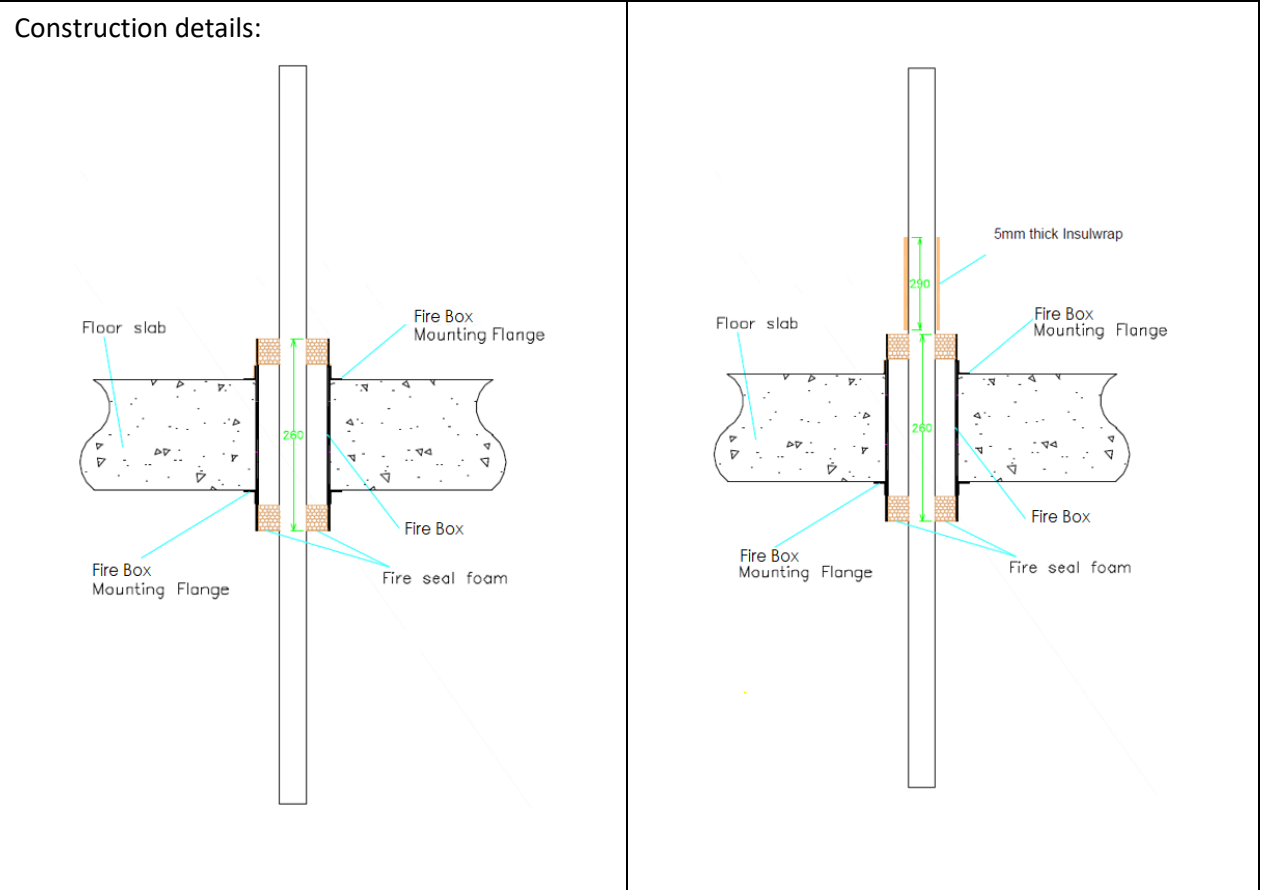
CS – Continuous Sustained insulation

C/C – Capped/Capped

A.3 Fire Box penetration seal in rigid floors min. 150 mm thick

A.3.1 Penetration seals, in concrete floors

Penetration Seal: Cables fitted through single and ganged Fire Box of dimensions, 65 x 65 mm to 102 x 102 mm. Maximum 60% cable fill. Fire Box has no external insulation material.



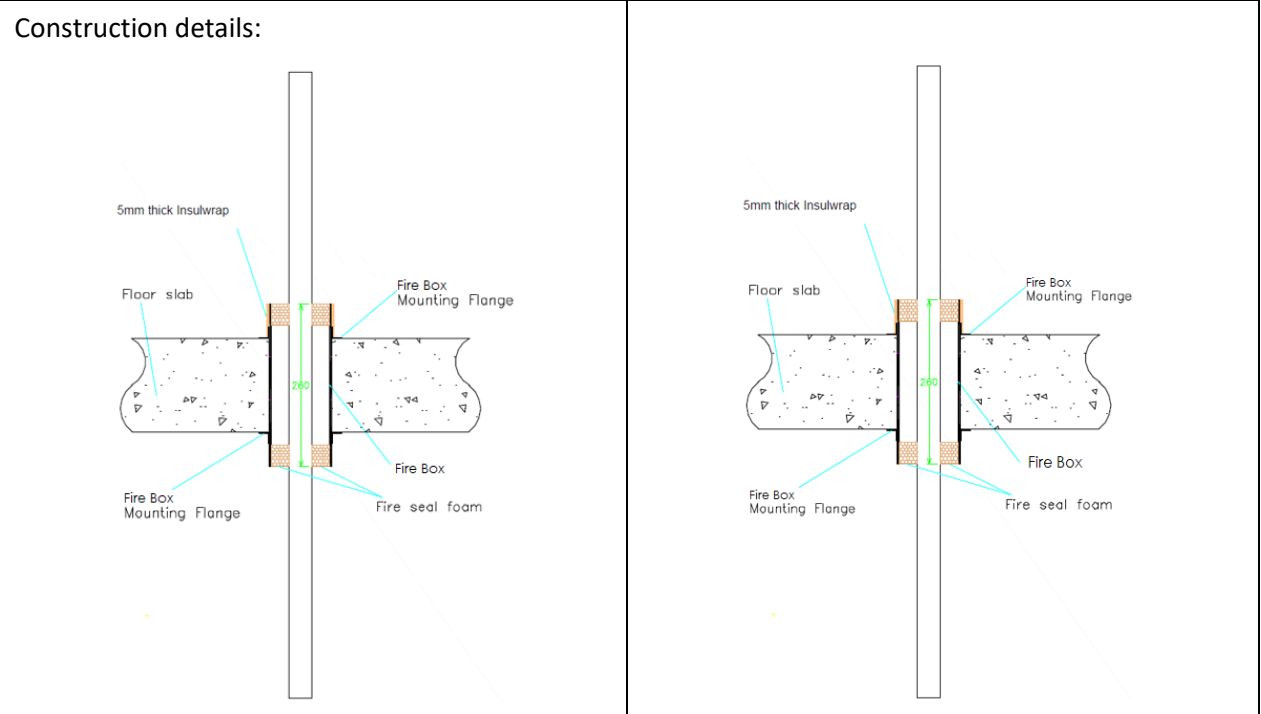
A.3.1.1

Services	Service Insulation	Classification
Electrical cables up to 80 mm diameter, single or in a bundle	None	E 180, EI 30
Electrical cables up to 21 mm diameter, single or in a bundle		E 240, EI 60
Telecom cables up to 21 mm diameter, single or in a bundle		E 180, EI 45
Electrical cables up to 80 mm diameter, single or in a bundle	300 mm long insulwrap to services, 5 mm thick	E 240, EI 60
Electrical cables up to 21 mm diameter, single or in a bundle		E 240, EI 60
Telecom cables up to 21 mm diameter, single or in a bundle		E 240 U/U, C/U, U/C, C/C
82mm dia. x 3.2mm wall PVC Pipe to EN 1329-1, EN 1453-1 or EN 1452-1	None	EI 60 U/U, C/U, U/C, C/C

Specific cables	Service Insulation	Classification
Type C3 electrical cables, single or in a bundle	None	E 240, EI 30
Type D3 or C2 electrical cables, single or in a bundle		E 240, EI 45
Type C1 or B electrical cables, single or in a bundle		E240, EI 60

A.3.2 Penetration seals, in concrete floors

Penetration Seal: Cables fitted through single and ganged Fire Box of dimensions, 65 x 65 mm to 102 x 102 mm. Maximum 60% cable fill. Exposed surfaces of Fire Box insulated with 5 mm thick insulwrap



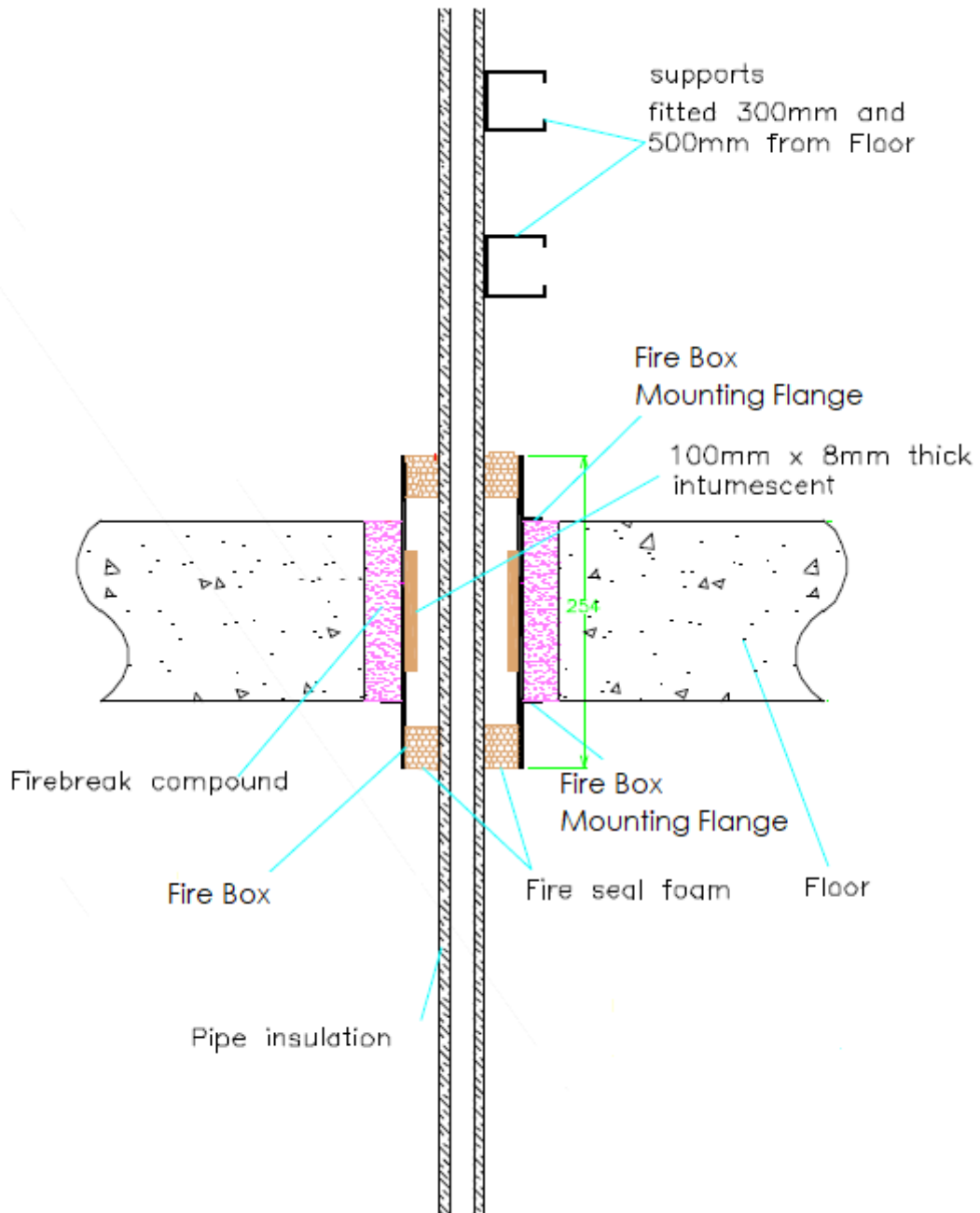
A.3.2.1

Services	Insulation	Classification
Electrical cables 51 to 80 mm diameter, single	None	E 240, EI 30
Electrical cables 22 to 50 mm diameter, single		E 180, EI 30
Electrical cables up to 21 mm diameter, single or in a bundle		E 240, EI 60
Telecom cables up to 21 mm diameter, single or in a bundle		E 240, EI 60
Electrical cables 51 to 80 mm diameter, single	300 mm long insulwrap to services, 5 mm thick	E 180, EI 90
Electrical cables 22 to 50 mm diameter, single		E 240, EI 90
Electrical cables up to 21 mm diameter, single or in a bundle		E 240, EI 120
Telecom cables up to 21 mm diameter, single or in a bundle		
82mm dia. x 3.2mm wall PVC Pipe to EN 1329-1, EN 1453-1 or EN 1452-1	None	E 240 U/U, C/U, U/C, C/C EI 120 U/U, C/U, U/C, C/C
Specific cables	Service Insulation	Classification
Type C1, C2, C3, D2, D3 electrical cables, single or in a bundle	300 mm long insulwrap to services, 5 mm thick	E 240, EI 120

A.3.3 Penetration seals, in concrete floors

Penetration Seal: Metal pipes fitted through single Fire Box of dimensions, 125 x 125 mm to 1100mm long x 125mm wide x 254mm deep. Maximum 60% service fill. Fire Box fitted with 50mm foam plugs to both sides and mortared in with 100 mm thick Firebreak compound to all voids around the device

Construction details:



A.3.3.1

Services	Insulation	Classification
Steel pipes 10 mm diameter / 1.0-14.2 mm wall	6 to 19 mm K-flex ST or Armaflex insulation (CS)	E 240 C/C, EI 120 C/C
Steel pipes 25 mm diameter / 1.2-14.2 mm wall	9 to 25 mm K-flex ST or Armaflex insulation (CS)	E 240 C/C, EI 120 C/C
Steel pipes 40 mm diameter / 1.5-14.2 mm wall	13 to 40 mm K-flex ST or Armaflex insulation (CS)	E 240 C/C, EI 180 C/C
Steel pipes 40 mm diameter / 1.5-14.2 mm wall	19 to 40 mm K-flex ST or Armaflex insulation (CS)	E 240 C/C, EI 120 C/C
Steel pipes 40 mm diameter / 1.5-14.2 mm wall	40 mm K-flex ST or Armaflex insulation (CS)	E 240 C/C, EI 120 C/C
Steel pipes 63.5 mm diameter / 1.6-14.2 mm wall	9 to 32 mm K-flex ST or Armaflex insulation (CS)	E 240 C/C, EI 90 C/C
Steel pipes 63.5 mm diameter / 1.6-14.2 mm wall	13-32 mm K-flex ST or Armaflex insulation (CS)	E 240 C/C, EI 120 C/C
Steel pipes 88.9 mm diameter / 1.6-14.2 mm wall	13 mm K-flex ST or Armaflex insulation (CS)	E 240 C/C, EI 120 C/C
Copper pipes 10 mm diameter / 1.2-14.2 mm wall	6 to 19 mm K-flex ST or Armaflex insulation (CS)	E 240 C/C*
Copper pipes 10 mm diameter / 1.2-14.2 mm wall	19 mm K-flex ST or Armaflex insulation (CS)	E 240 C/C, EI 120 C/C
Copper pipes 28 mm diameter / 1.5-14.2 mm wall	9 to 25 mm K-flex ST or Armaflex insulation (CS)	E 240 C/C, EI 120 C/C
Copper pipes 42 mm diameter / 1.5-14.2 mm wall	13 to 40 mm K-flex ST or Armaflex insulation (CS)	E 240 C/C, EI 90 C/C
Copper pipes 42 mm diameter / 1.5-14.2 mm wall	40 mm K-flex ST or Armaflex insulation (CS)	E 240 C/C, EI 120 C/C

CS – Continuous Sustained insulation

C/C – Capped/Capped

* No insulation classification obtained due to test instrument failure