



INDEX FOR DETAILED DRAWINGS

Cables in floors.....	page 2
Steel pipes in floors.....	pages 3-5
Copper pipes in floors.....	pages 5-7
Alupex pipes in floors.....	pages 7-8
Plastic pipes in floors.....	pages 8-9
Plastic conduits in floors.....	page 9
Cables in masonry or concrete walls.....	pages 9-10
Steel pipes in masonry or concrete walls.....	pages 11-12
Copper pipes in masonry or concrete walls.....	pages 12-13
Alupex pipes in masonry or concrete walls.....	page 13
Plastic pipes in masonry or concrete walls.....	pages 13-14
Cables in drywalls, masonry or concrete walls.....	page 14
Steel pipes in drywalls, masonry or concrete walls.....	pages 15-16
Copper pipes in drywalls, masonry or concrete walls.....	pages 16-17
Alupex pipes in drywalls, masonry or concrete walls.....	page 18
Plastic pipes in drywalls, masonry or concrete walls.....	pages 19-20
Plastic conduits in drywalls, masonry or concrete walls.....	pages 20-21

For linear seals without services, please refer to the Technical Data Sheet on page 2. For guidance on fire sealing ventilation ducts, please refer to Protecta FR Damper's Technical Data Sheet.

GENERAL PRODUCT DESCRIPTION

Protecta® FR Acrylic is a high specification formulation designed to prevent the spread of fire, smoke and gases through openings in fire rated walls and floors, specifically linear movement joints and openings for building service penetrations. FR Acrylic expands when it is subjected to fire and closes openings around penetrations when any combustible or low temperature melting materials have burnt away. FR Acrylic should be applied over suitable backing materials to ensure correct width to depth ratio and to reduce shrinkage of the joint during hardening.

GENERAL GUIDE

Minimum separations and limitations: Services (single) can be sealed as specified in the detailed drawings. Minimum separation between services and the edge of the seal within each aperture should be 10mm to allow for correct fitting of backing and seal depth. Minimum separation between apertures should be at least 30mm. For larger joint dimensions or apertures other than described in the detailed drawings, Protecta® FR Board or EX Mortar should be used. In areas with a high degree of humidity and/or in joints with excessive movement, Protecta® FR IPT should be used.

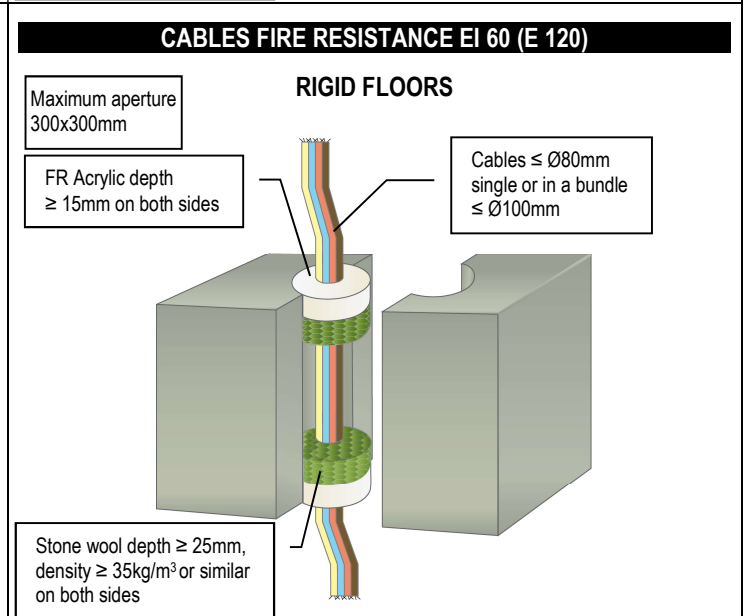
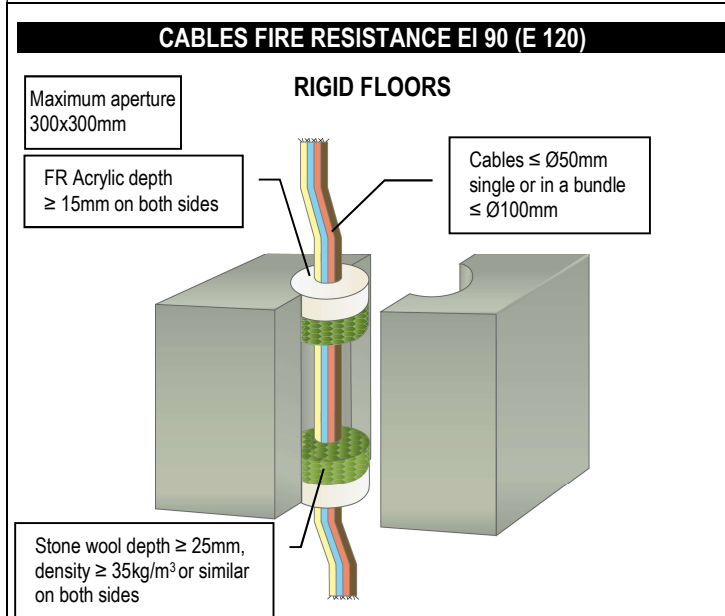
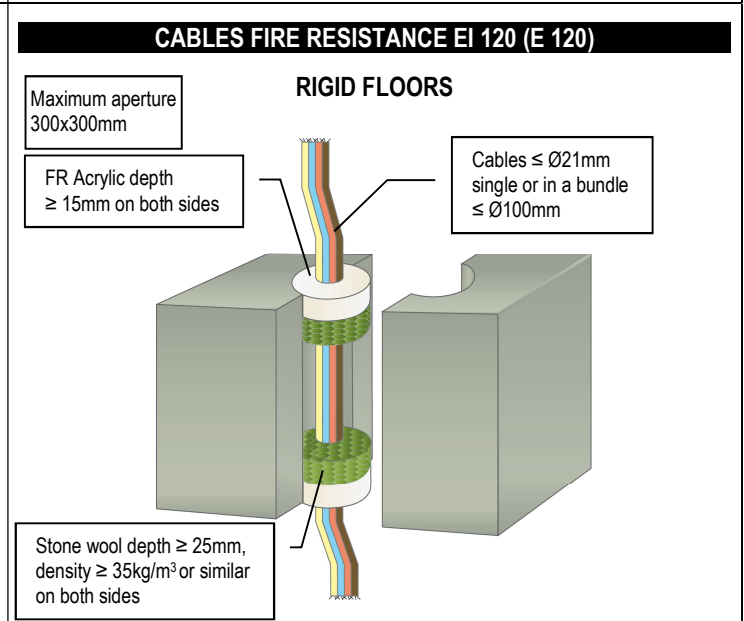
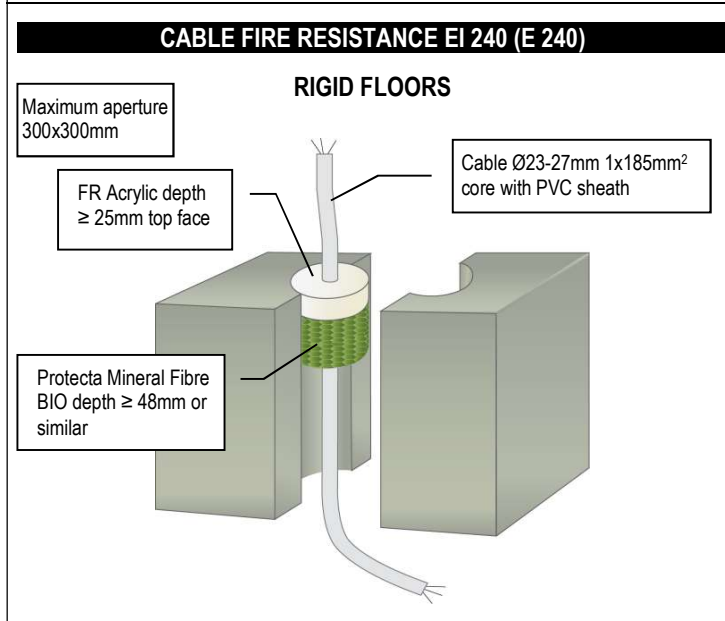
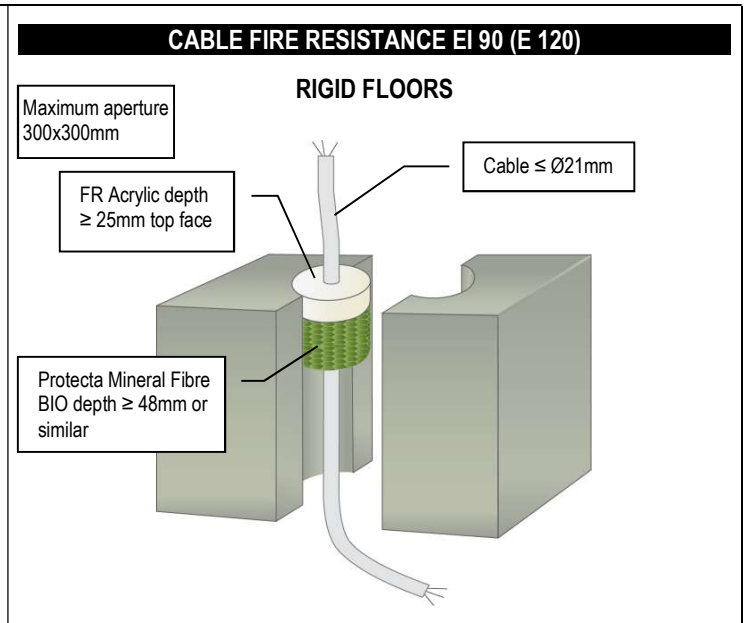
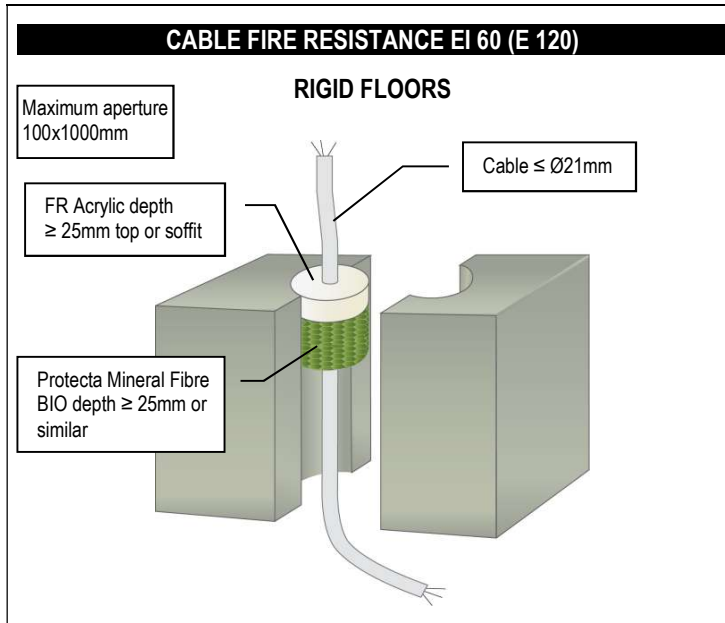
Supporting constructions: Flexible walls must have a minimum thickness of 75 mm and comprise steel studs or timber studs*) lined on both faces with minimum 1 layer of 12.5 mm thick boards. Rigid walls must have a minimum thickness of 75 mm and comprise concrete, aerated concrete or masonry, with a minimum density of 650 kg/m³. Rigid floors must have a minimum thickness of 150 mm and comprise aerated concrete or concrete with a minimum density of 650 kg/m³. The supporting construction must be classified in accordance with EN 13501-2 for the required fire resistance period.

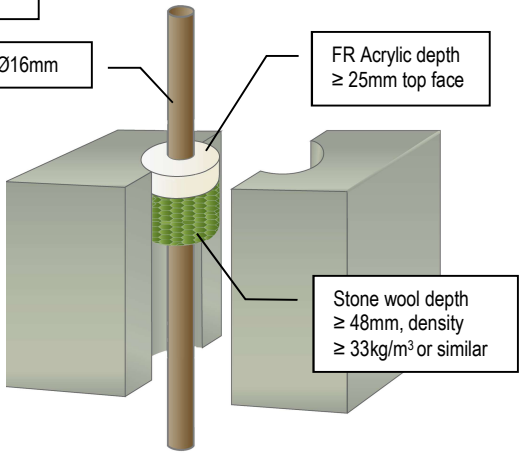
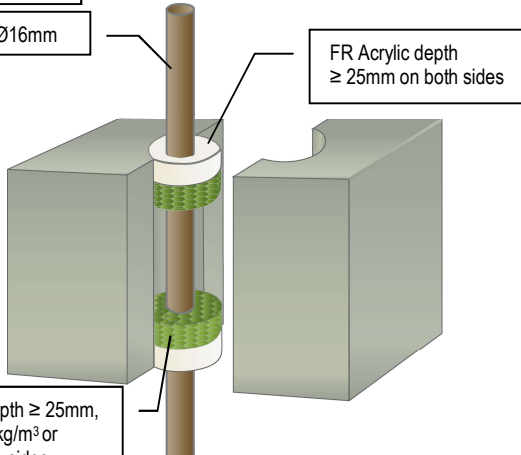
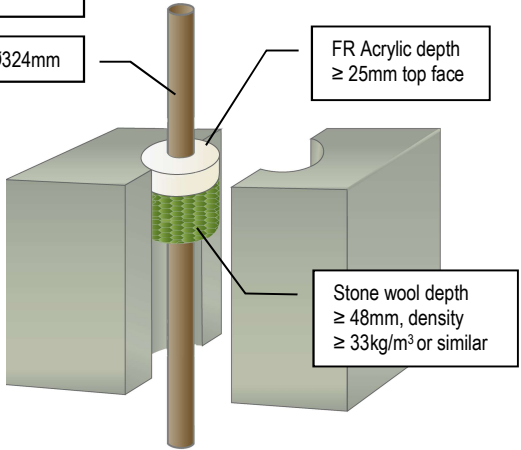
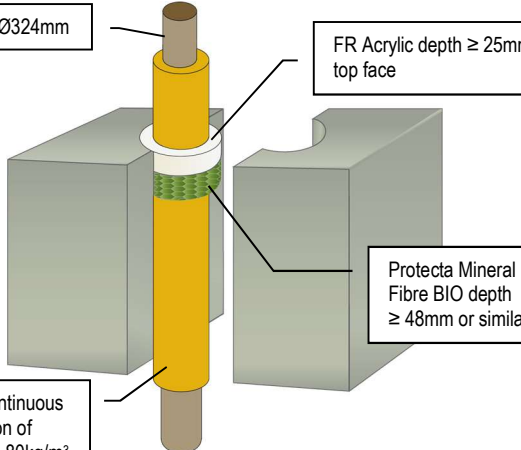
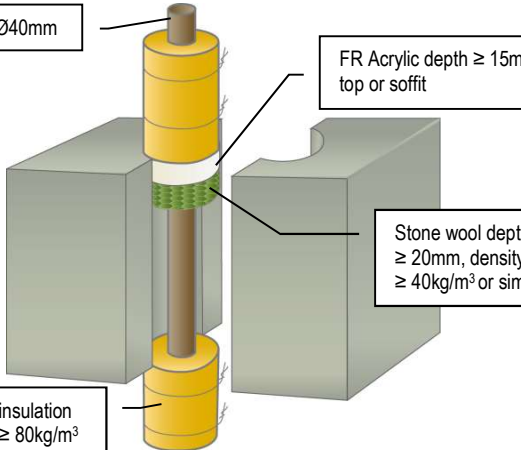
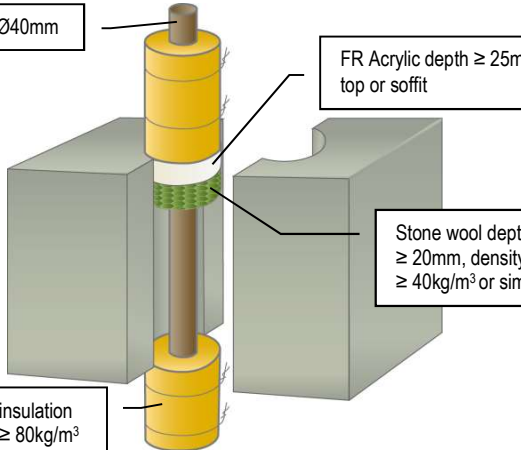
*) Timber studs: no part of the penetration seal may be closer than 100 mm to a stud, and minimum 100 mm of insulation of class A1 or A2 according to EN 13501-1 must be provided within the cavity between the penetration seal and the stud.

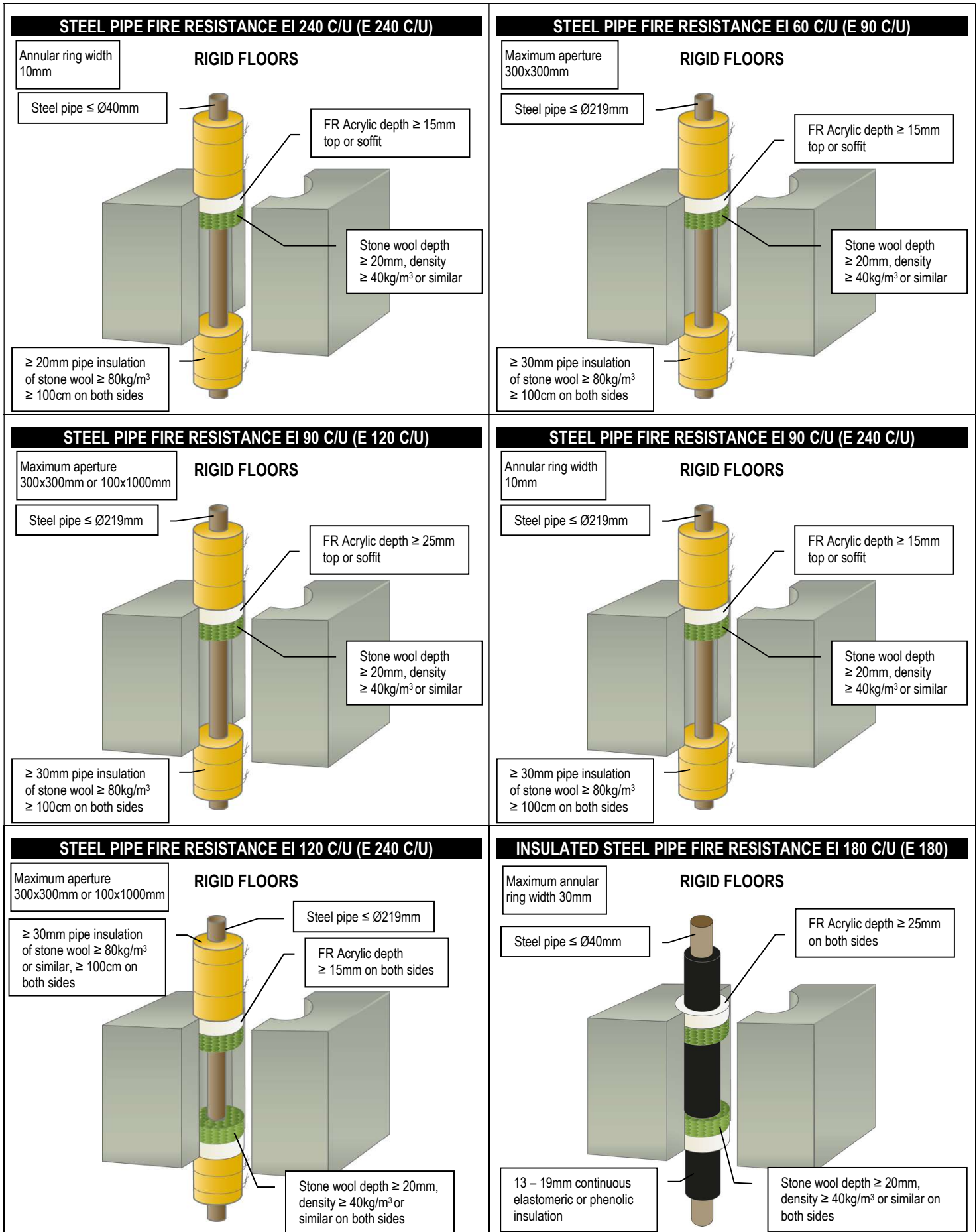


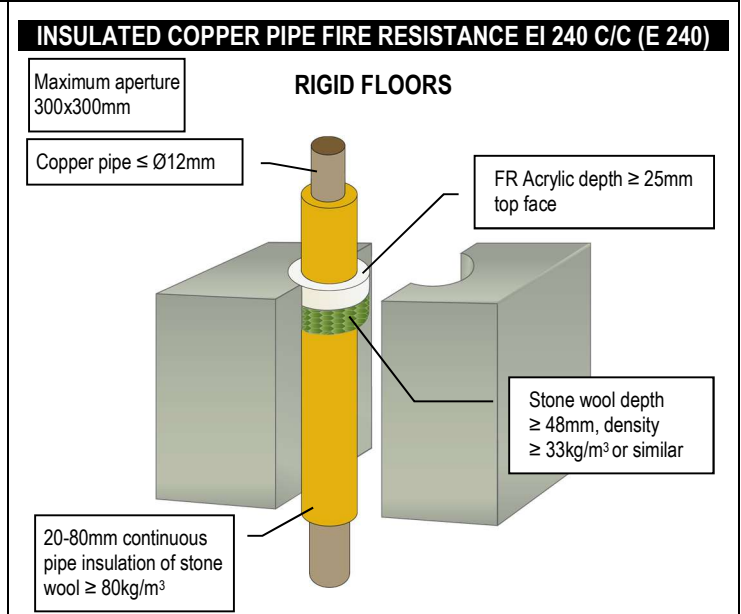
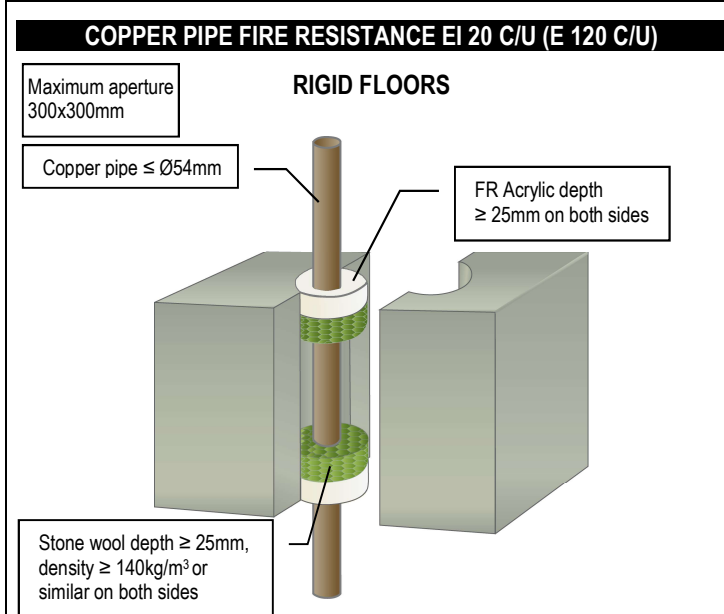
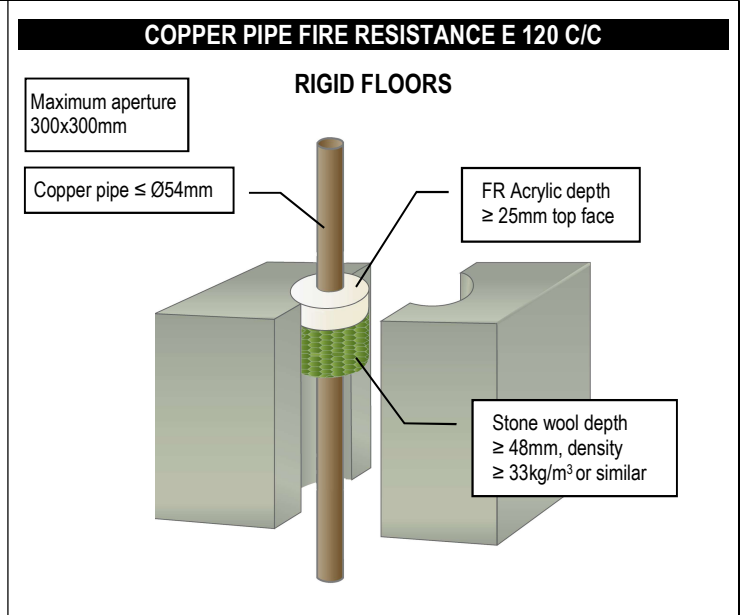
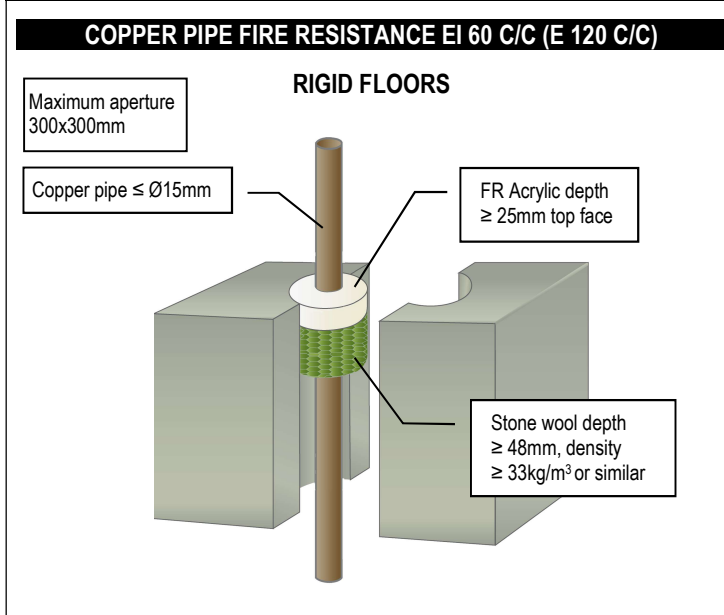
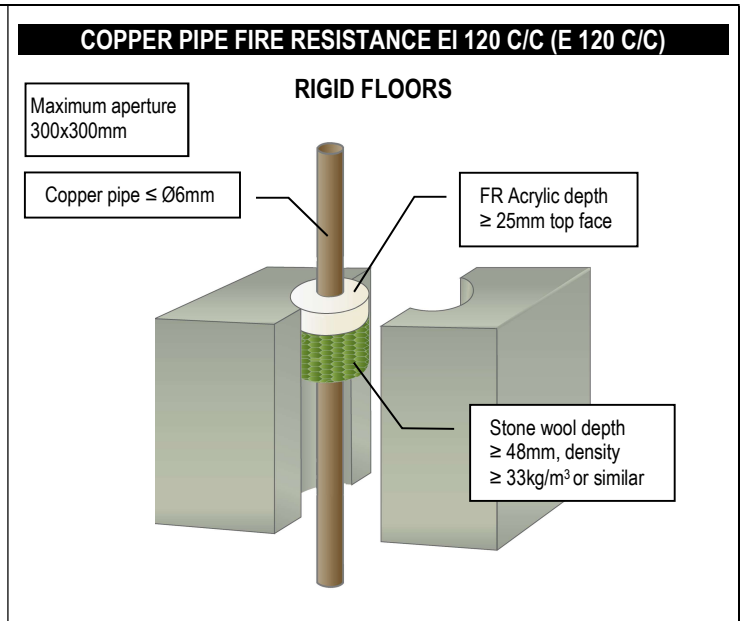
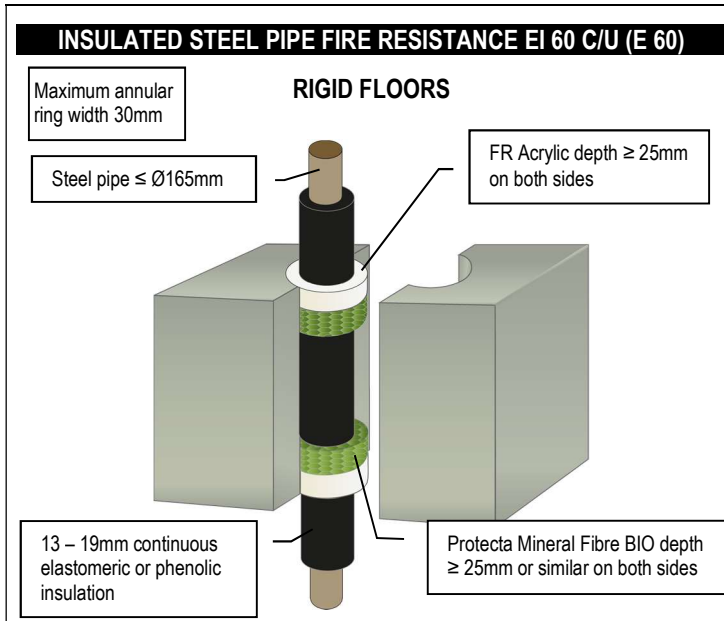
INSTALLATION

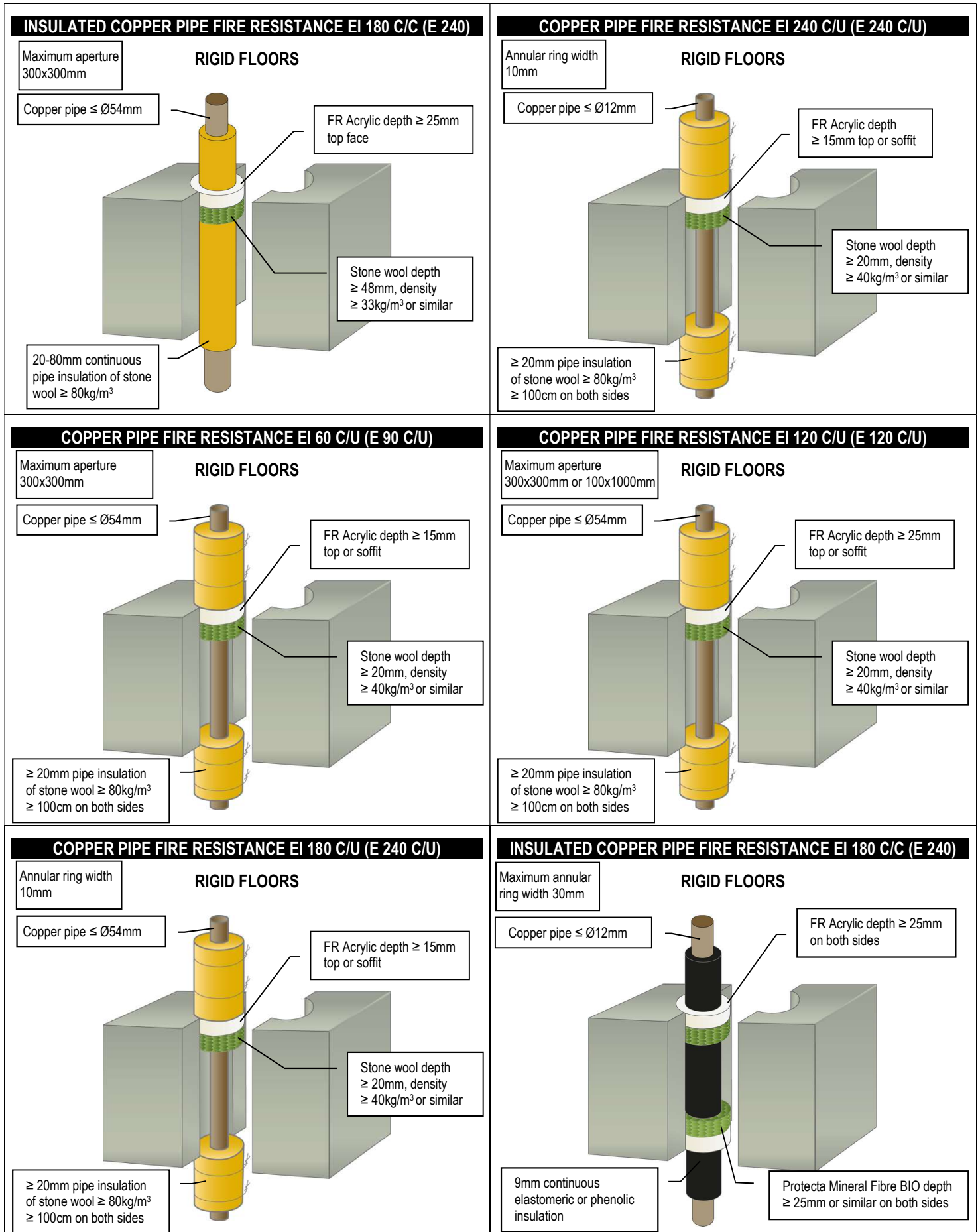
1. Before installing Protecta® FR Acrylic ensure that the surface of all service penetrations and surrounding construction is free from all loose contaminants, dust and grease.
2. Where Protecta® FR Acrylic is to be installed against surfaces that cannot tolerate direct contact; appropriate surface preparation should be made (contact Polyseam for guidance in these cases). For paints sensitive to sealing compounds, priming with a PVA primer is recommended.
3. As Protecta® FR Acrylic is water based, in cases where corrosion protection is a problem; some metals may require a barrier between the sealant and the metal surface prior to this installation.
4. When installing the sealant in gypsum boards, the exposed edges of the board can be wetted with water, or Protecta® FR Acrylic diluted with water to prime the surfaces helping adhesion and preventing excessive joint shrinkage.
5. When installing Protecta® FR Acrylic in hollow floor slabs or boards, fire seals specified as single sided should be installed from the soffit side of the floor assuming there is sufficient thickness of concrete below the void to follow the installation guide. Where this is not the case, tubular voids should be filled with stone wool normally the same thickness as the depth of the floor slab. Alternatively, simply fire seal on both sides.
6. When installing any backing material, cut this slightly oversize and insert into the gap ensuring a tight friction fit. Ensure correct depth is achieved.
7. Fill the gap or joint with Protecta® FR Acrylic to the required depth. Refer to the drawings on following pages 2 to 21 for guidance on joint design/dimensions. If installation does not have to meet any specific fire specification, it is recommended that a width to depth ratio of 2:1 is utilized, with a minimum depth of 12mm of sealant.
8. Apply the sealant generously to prevent air bubbles. Finish the bead with a moist spatula, pallet knife or brush.
9. Protecta® FR Acrylic can be over-painted with most emulsion or alkyd (gloss) paints.

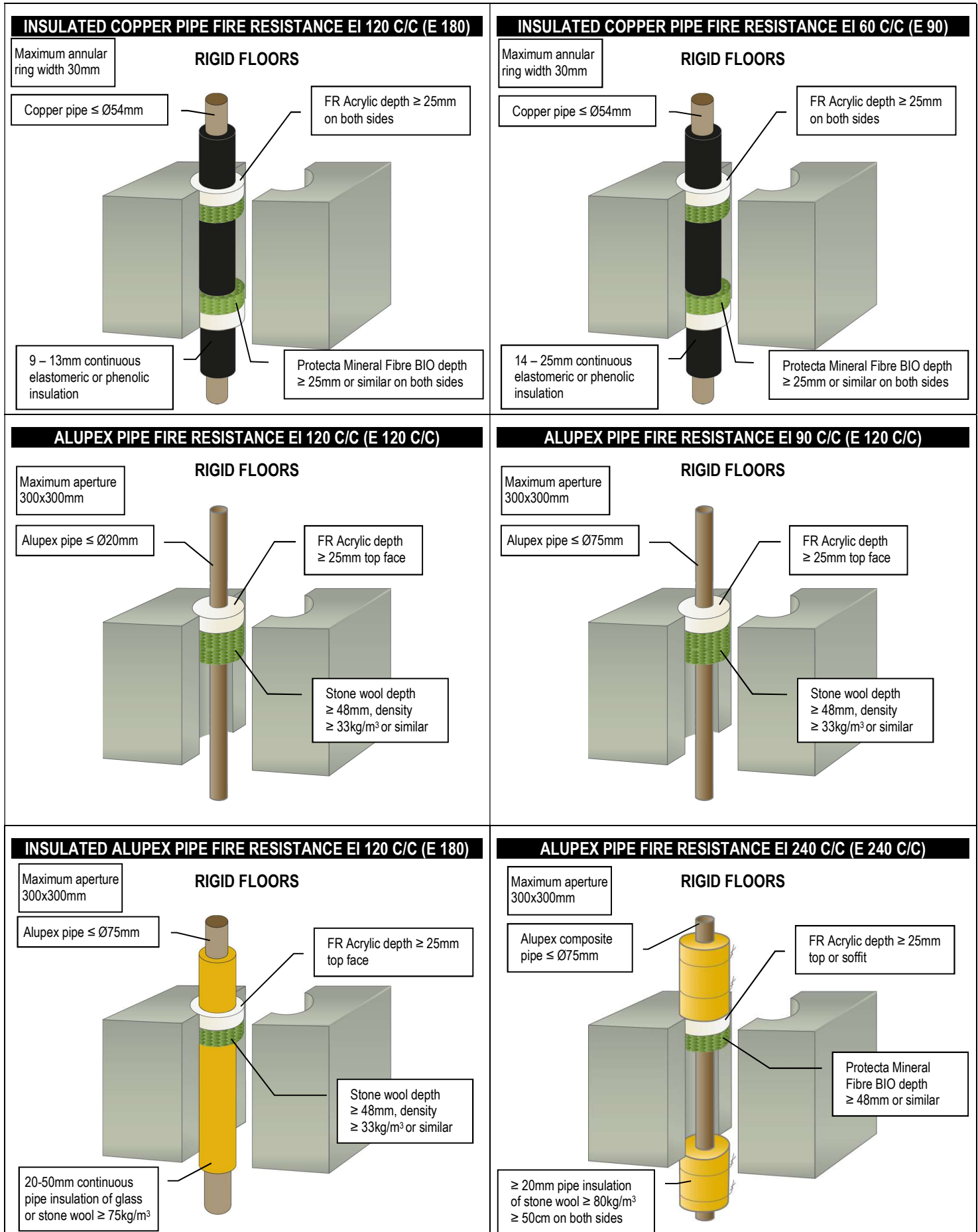


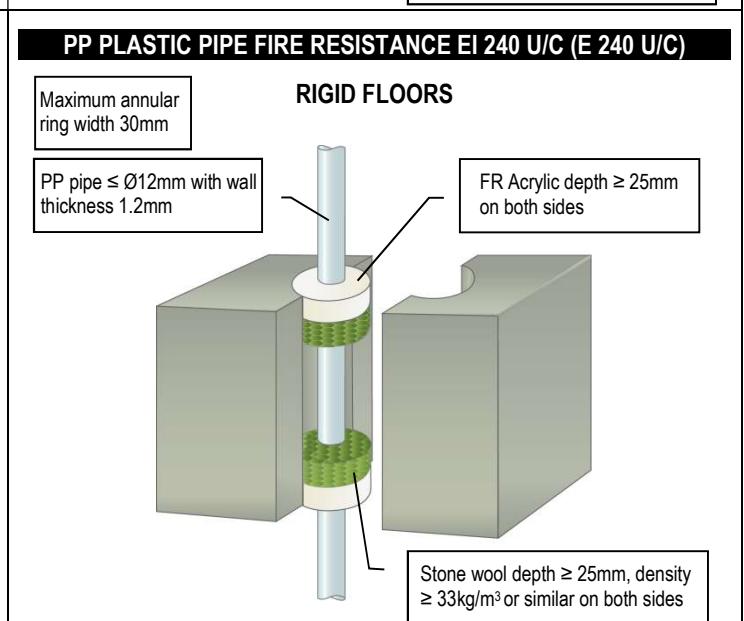
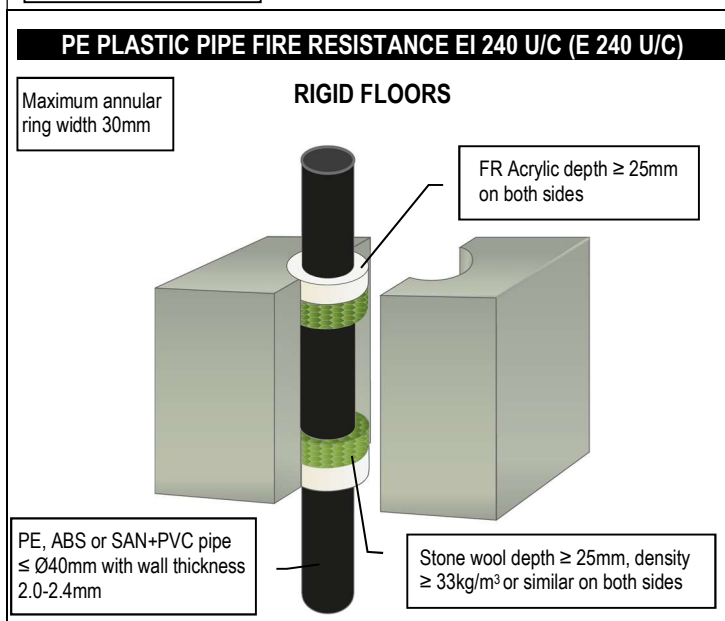
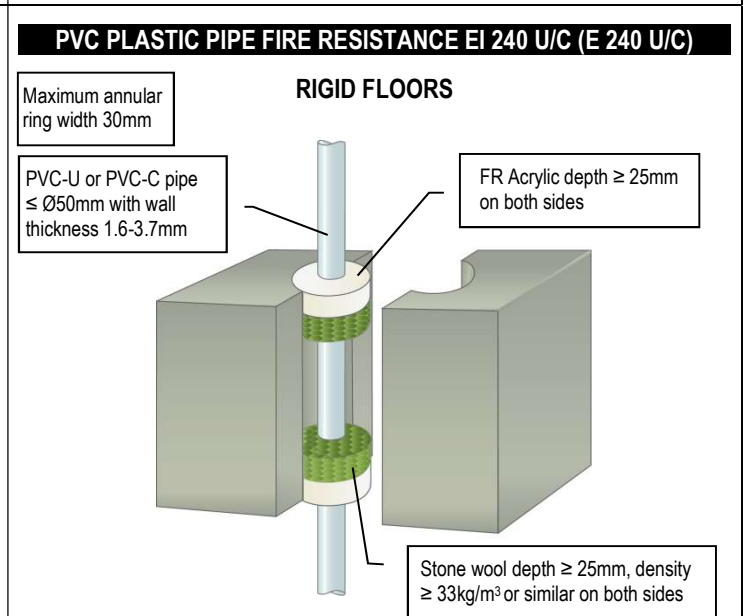
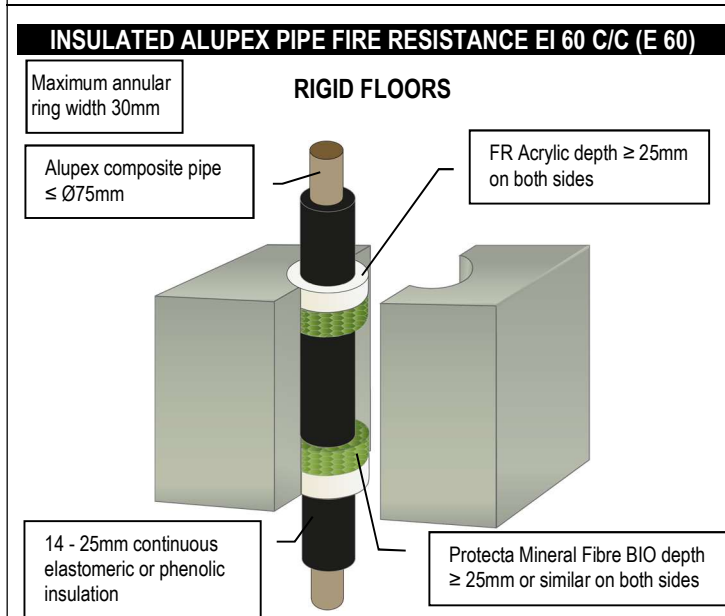
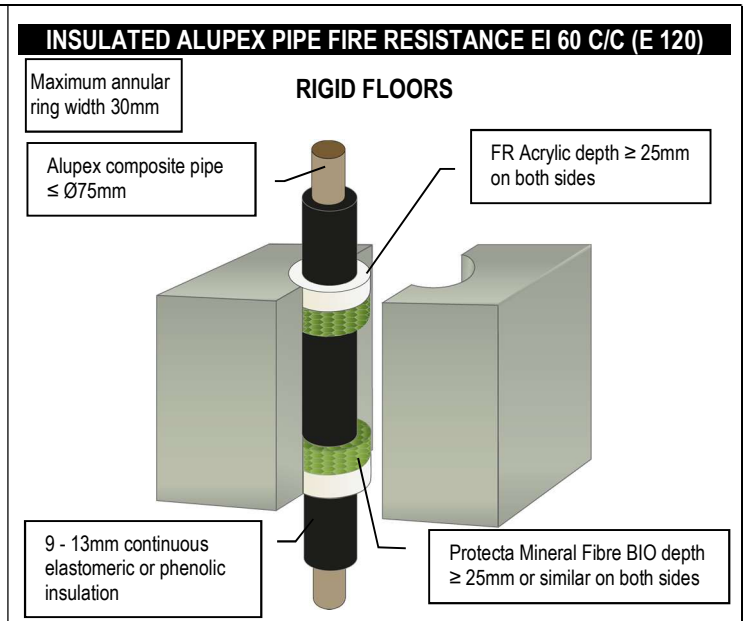
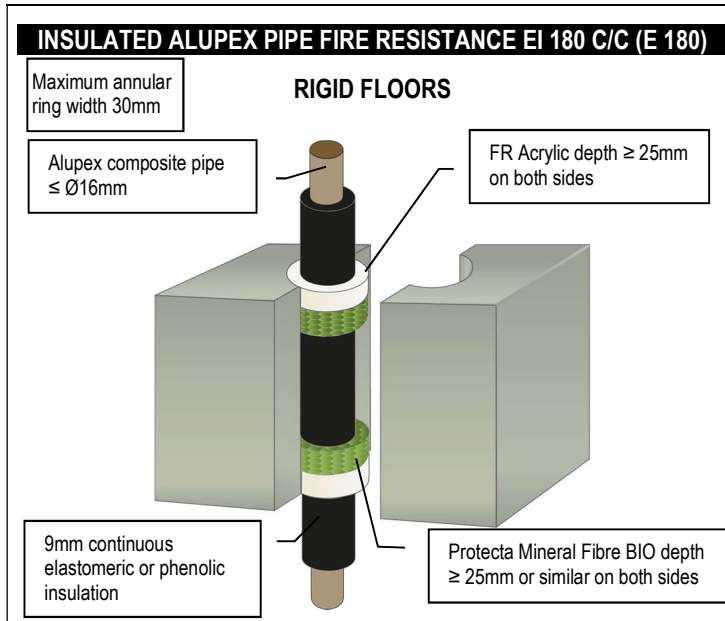
<p>STEEL PIPE FIRE RESISTANCE EI 120 C/U (E 120 C/U)</p> <p>RIGID FLOORS</p> <p>Maximum aperture 300x300mm</p> <p>Steel pipe $\leq \varnothing 16\text{mm}$</p> <p>FR Acrylic depth $\geq 25\text{mm}$ top face</p> <p>Stone wool depth $\geq 48\text{mm}$, density $\geq 33\text{kg/m}^3$ or similar</p> 	<p>STEEL PIPE FIRE RESISTANCE EI 240 C/U (E 240 C/U)</p> <p>RIGID FLOORS</p> <p>Maximum aperture 300x300mm</p> <p>Steel pipe $\leq \varnothing 16\text{mm}$</p> <p>FR Acrylic depth $\geq 25\text{mm}$ on both sides</p> <p>Stone wool depth $\geq 25\text{mm}$, density $\geq 140\text{kg/m}^3$ or similar on both sides</p> 
<p>STEEL PIPE FIRE RESISTANCE E 120 C/U</p> <p>RIGID FLOORS</p> <p>Maximum aperture 300x300mm or $\varnothing 344\text{mm}$</p> <p>Steel pipe $\leq \varnothing 324\text{mm}$</p> <p>FR Acrylic depth $\geq 25\text{mm}$ top face</p> <p>Stone wool depth $\geq 48\text{mm}$, density $\geq 33\text{kg/m}^3$ or similar</p> 	<p>INSULATED STEEL PIPE FIRE RESISTANCE EI 240 C/U (E 240)</p> <p>RIGID FLOORS</p> <p>Maximum aperture 300x300mm or $\varnothing 504\text{mm}$</p> <p>Steel pipe $\leq \varnothing 324\text{mm}$</p> <p>FR Acrylic depth $\geq 25\text{mm}$ top face</p> <p>Protecta Mineral Fibre BIO depth $\geq 48\text{mm}$ or similar</p> <p>20-80mm continuous pipe insulation of stone wool $\geq 80\text{kg/m}^3$</p> 
<p>STEEL PIPE FIRE RESISTANCE EI 60 C/U (E 90 C/U)</p> <p>RIGID FLOORS</p> <p>Maximum aperture 300x300mm</p> <p>Steel pipe $\leq \varnothing 40\text{mm}$</p> <p>FR Acrylic depth $\geq 15\text{mm}$ top or soffit</p> <p>Stone wool depth $\geq 20\text{mm}$, density $\geq 40\text{kg/m}^3$ or similar</p> <p>$\geq 20\text{mm}$ pipe insulation of stone wool $\geq 80\text{kg/m}^3$ $\geq 100\text{cm}$ on both sides</p> 	<p>STEEL PIPE FIRE RESISTANCE EI 90 C/U (E 120 C/U)</p> <p>RIGID FLOORS</p> <p>Maximum aperture 300x300mm or 100x1000mm</p> <p>Steel pipe $\leq \varnothing 40\text{mm}$</p> <p>FR Acrylic depth $\geq 25\text{mm}$ top or soffit</p> <p>Stone wool depth $\geq 20\text{mm}$, density $\geq 40\text{kg/m}^3$ or similar</p> <p>$\geq 20\text{mm}$ pipe insulation of stone wool $\geq 80\text{kg/m}^3$ $\geq 100\text{cm}$ on both sides</p> 



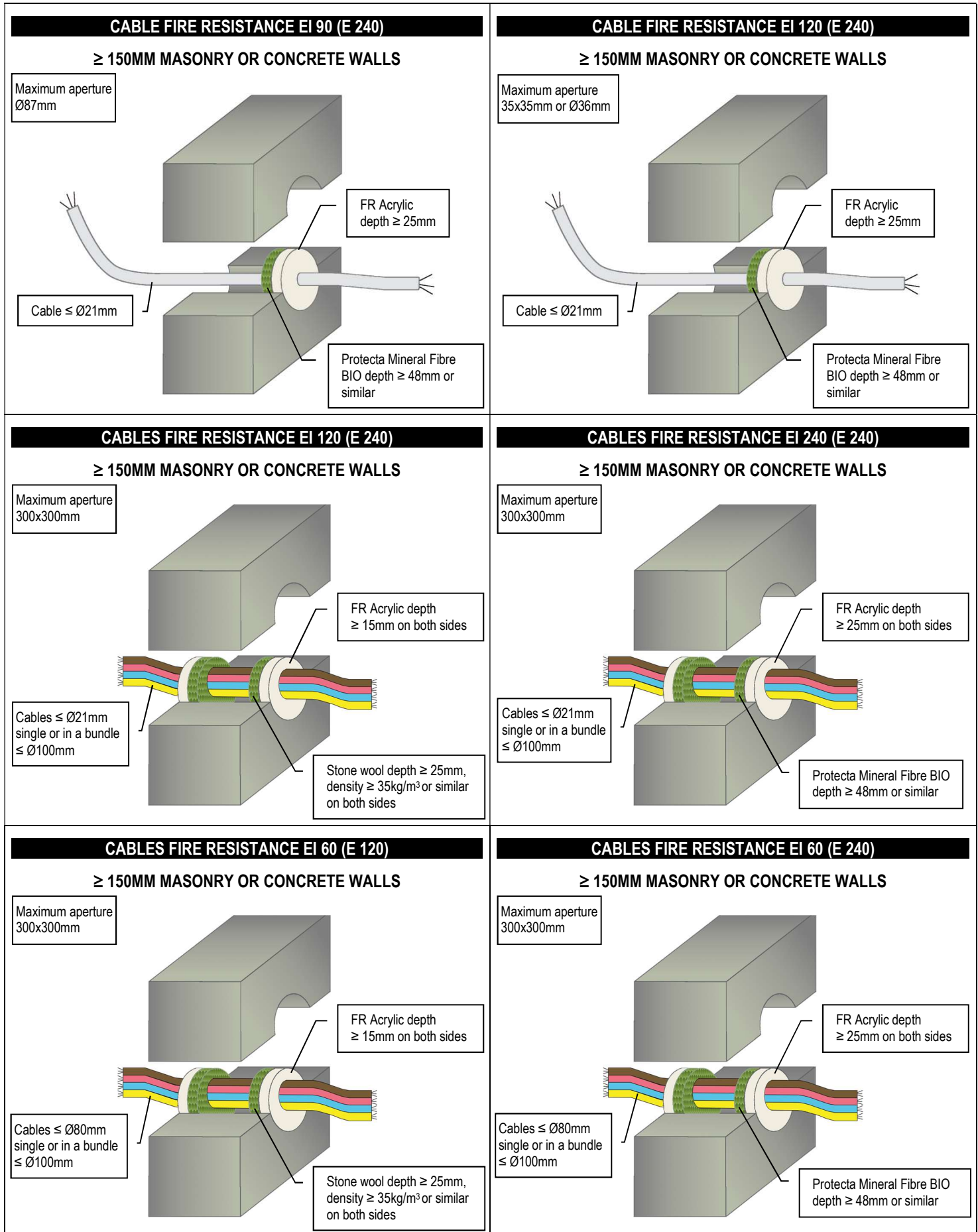


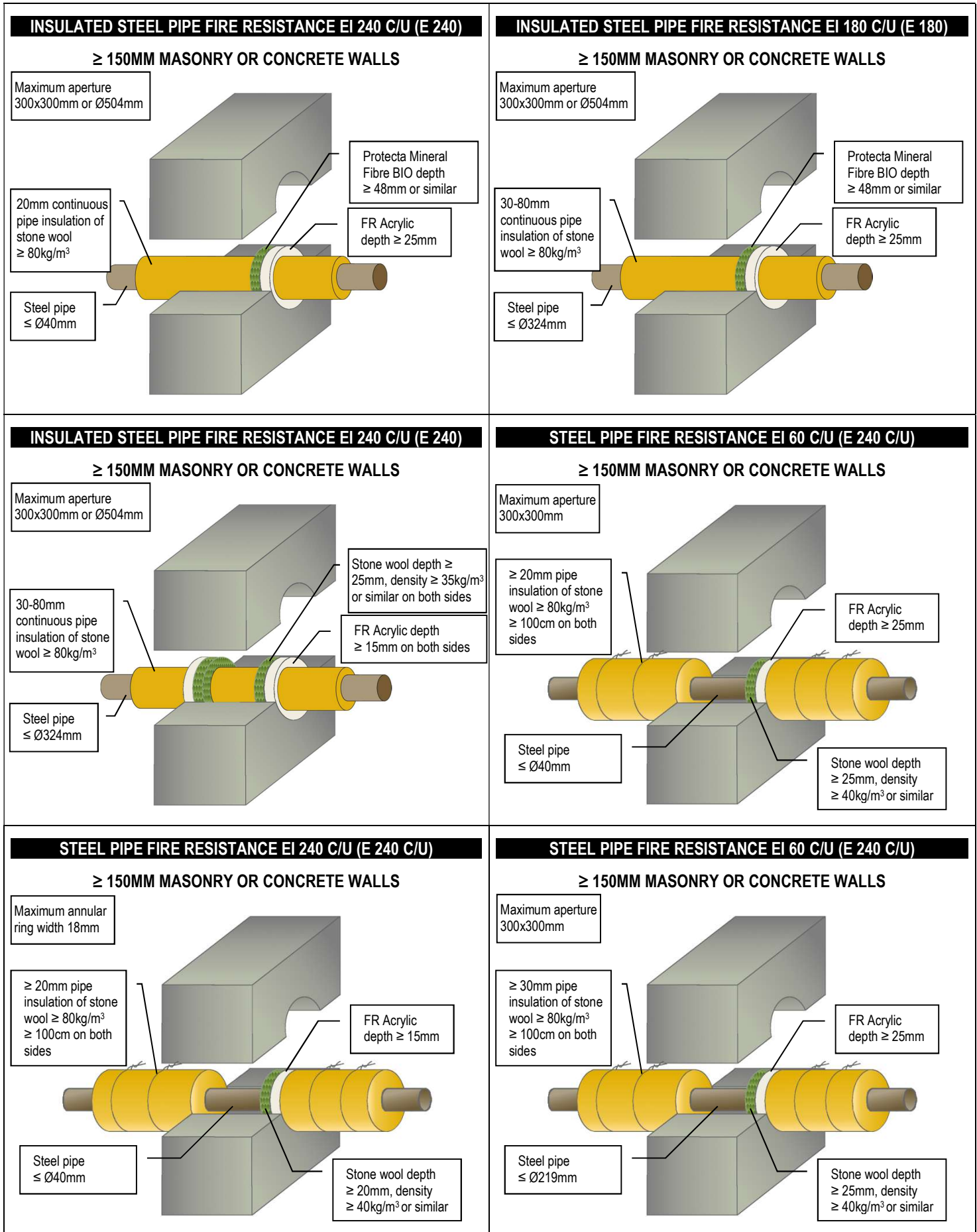


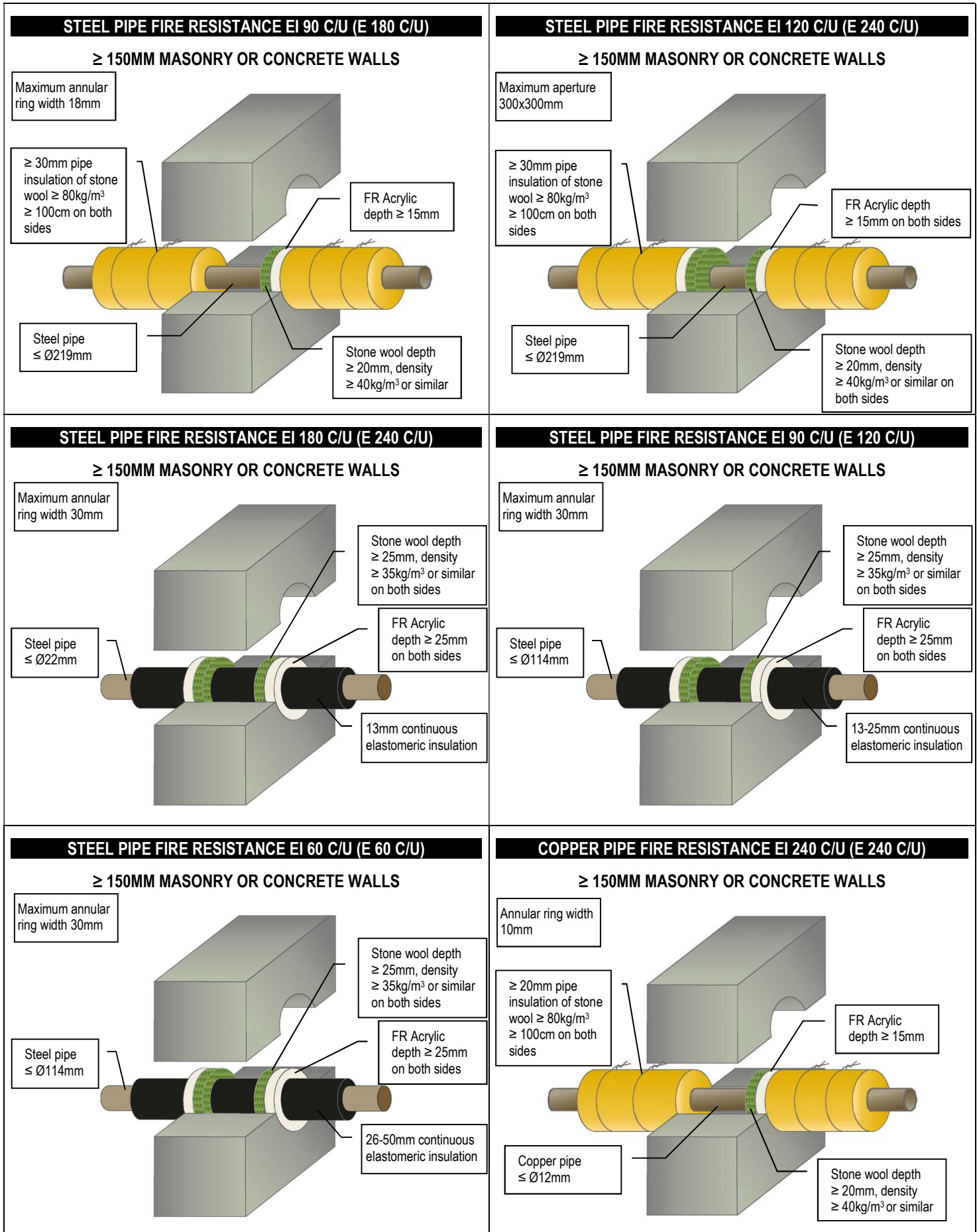




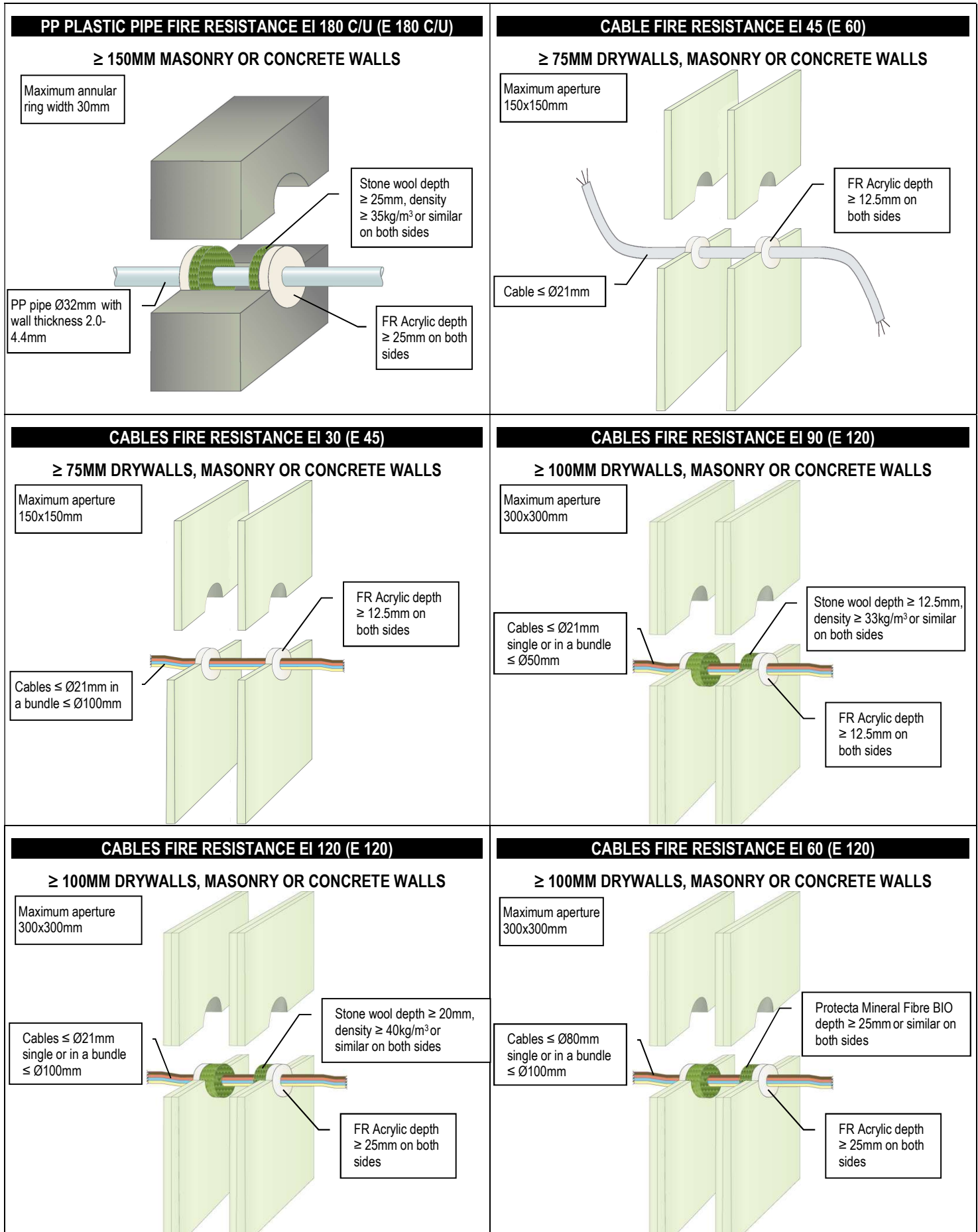
<p>PP PLASTIC PIPE FIRE RESISTANCE EI 90 U/C (E 90 U/C)</p> <p>RIGID FLOORS</p> <p>Maximum annular ring width 30mm</p> <p>PP pipe $\leq \varnothing 75\text{mm}$ with wall thickness 1.2-6.8mm</p> <p>FR Acrylic depth $\geq 25\text{mm}$ on both sides</p> <p>Stone wool depth $\geq 25\text{mm}$, density $\geq 33\text{kg/m}^3$ or similar on both sides</p>	<p>PEX PIPE-IN-PIPE SYSTEM FIRE RESISTANCE EI 90 C/C (E 90)</p> <p>RIGID FLOORS</p> <p>Maximum annular ring width 30mm</p> <p>PEX pipe $\leq \varnothing 25\text{mm}$</p> <p>FR Acrylic depth $\geq 25\text{mm}$ top face</p> <p>Protecta Mineral Fibre BIO depth $\geq 48\text{mm}$ or similar</p>
<p>PVC CONDUIT FIRE RESISTANCE EI 240 U/C (E 240 U/C)</p> <p>RIGID FLOORS</p> <p>Maximum annular ring width 30mm</p> <p>PVC-U & PVC-C pipe $\leq \varnothing 40\text{mm}$ with wall thickness 1.6-3.7mm</p> <p>FR Acrylic depth $\geq 25\text{mm}$ on both sides</p> <p>Cables $\leq \varnothing 21\text{mm}$ single or in a bundle</p> <p>Stone wool depth $\geq 25\text{mm}$, density $\geq 33\text{kg/m}^3$ or similar on both sides</p>	<p>PE CONDUIT FIRE RESISTANCE EI 180 U/C (E 180 U/C)</p> <p>RIGID FLOORS</p> <p>Maximum annular ring width 30mm</p> <p>PE, ABS & SAN+PVC pipe $\leq \varnothing 40\text{mm}$ with wall thickness 2.0-2.4mm</p> <p>FR Acrylic depth $\geq 25\text{mm}$ on both sides</p> <p>Cables $\leq \varnothing 21\text{mm}$ single or in a bundle</p> <p>Stone wool depth $\geq 25\text{mm}$, density $\geq 33\text{kg/m}^3$ or similar on both sides</p>
<p>PP CONDUIT FIRE RESISTANCE EI 180 U/C (E 180 U/C)</p> <p>RIGID FLOORS</p> <p>Maximum annular ring width 30mm</p> <p>PP pipe $\leq \varnothing 40\text{mm}$ with wall thickness 1.2-1.8mm</p> <p>FR Acrylic depth $\geq 25\text{mm}$ on both sides</p> <p>Cables $\leq \varnothing 21\text{mm}$ single or in a bundle</p> <p>Stone wool depth $\geq 25\text{mm}$, density $\geq 33\text{kg/m}^3$ or similar on both sides</p>	<p>CABLE FIRE RESISTANCE EI 60 (E 240)</p> <p>$\geq 150\text{MM}$ MASONRY OR CONCRETE WALLS</p> <p>Maximum aperture 300x300mm</p> <p>FR Acrylic depth $\geq 25\text{mm}$</p> <p>Cable $\leq \varnothing 21\text{mm}$</p> <p>Protecta Mineral Fibre BIO depth $\geq 48\text{mm}$ or similar</p>

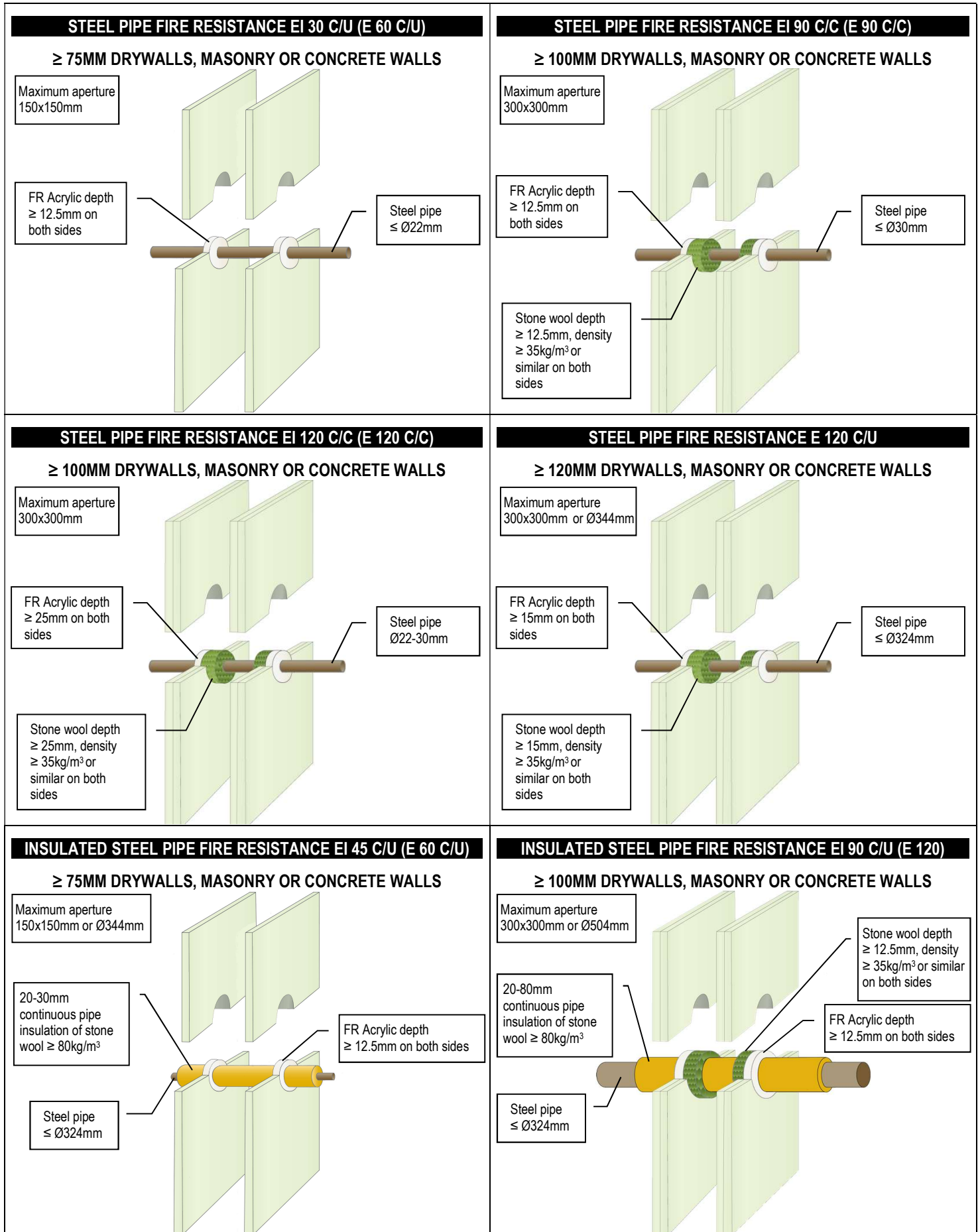


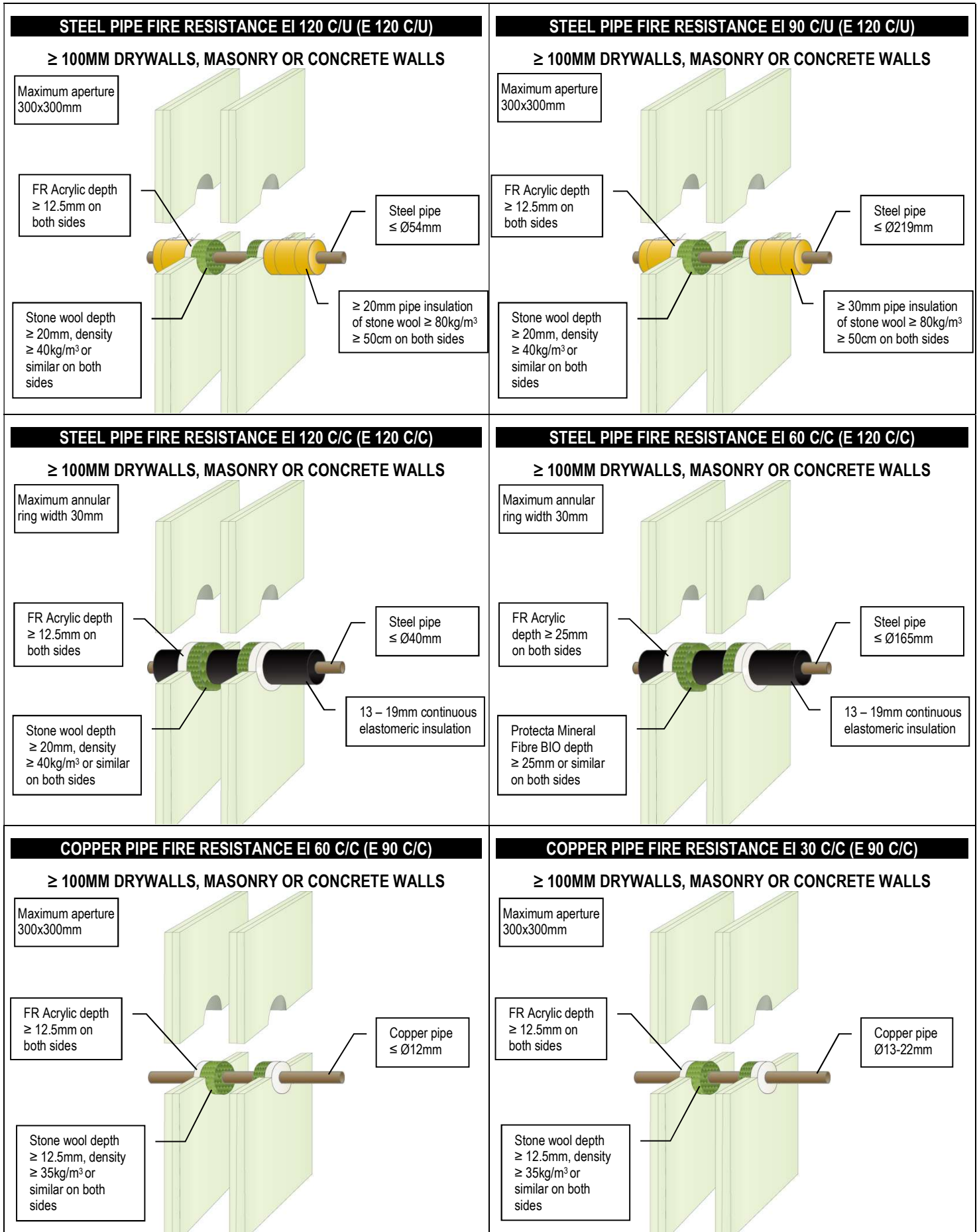


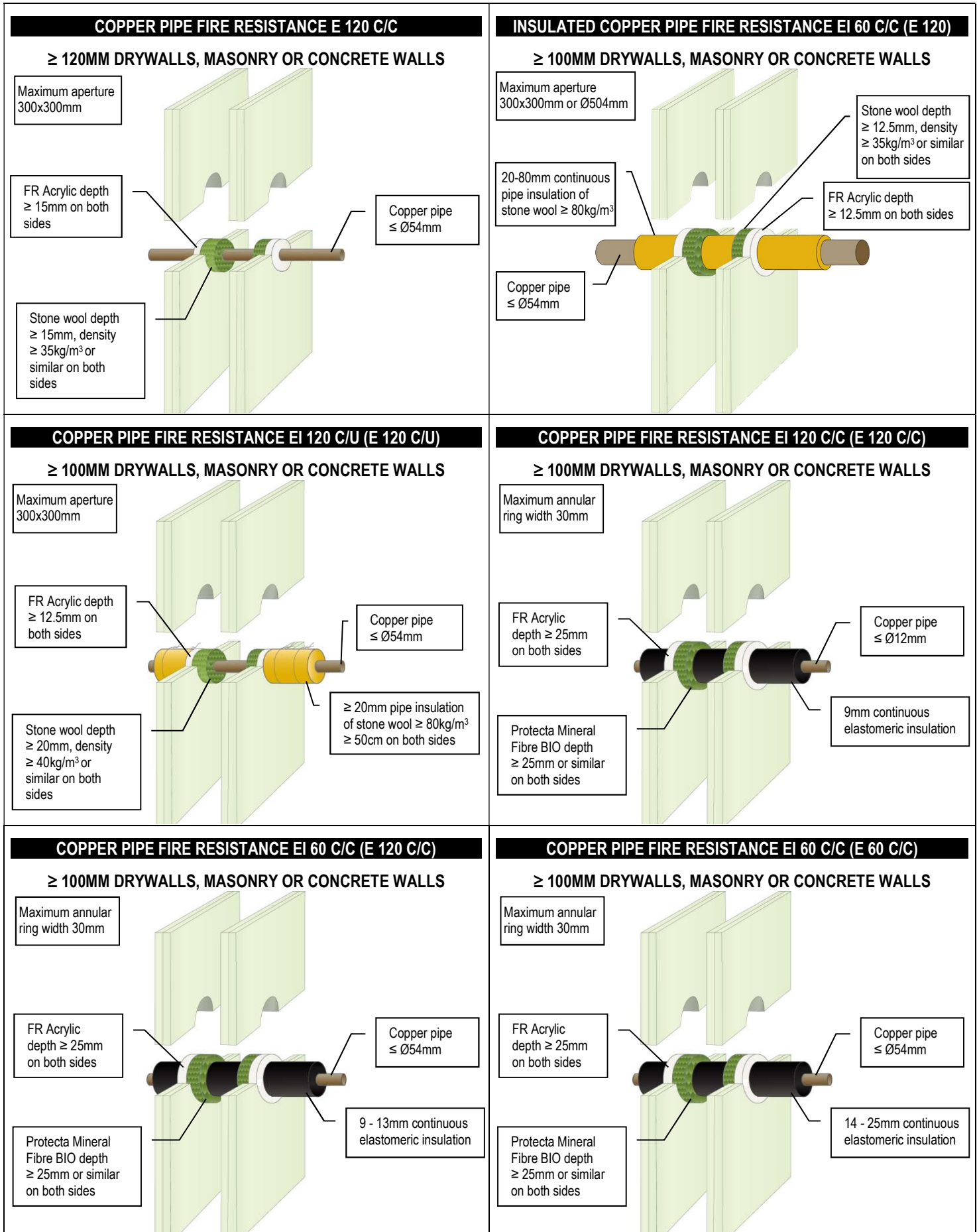


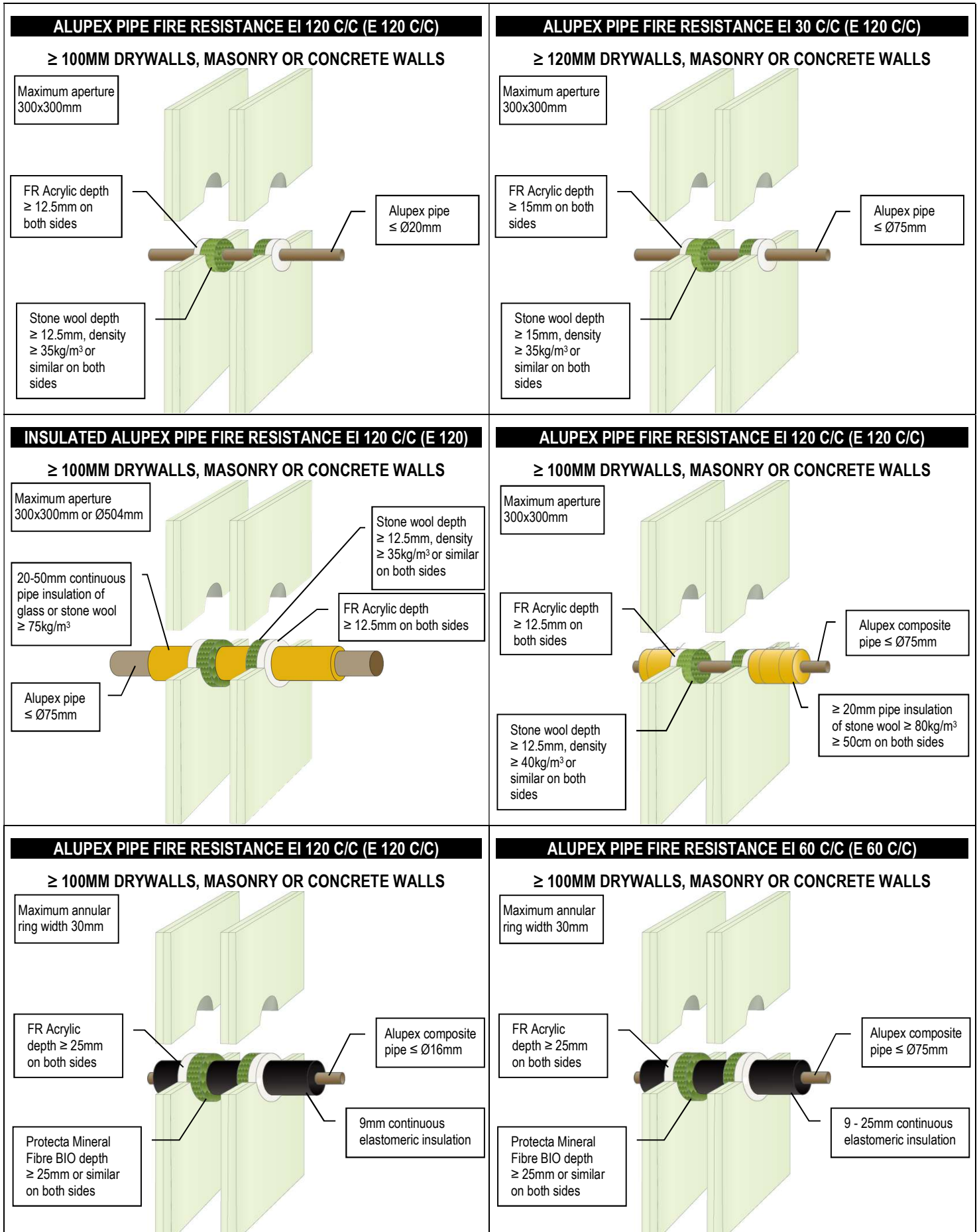
<p>COPPER PIPE FIRE RESISTANCE EI 60 C/U (E 240 C/U)</p> <p>≥ 150MM MASONRY OR CONCRETE WALLS</p> <p>Maximum aperture 300x300mm</p> <p>≥ 20mm pipe insulation of stone wool ≥ 80kg/m³ ≥ 100cm on both sides</p> <p>FR Acrylic depth ≥ 25mm</p> <p>Copper pipe ≤ Ø54mm</p> <p>Stone wool depth ≥ 25mm, density ≥ 40kg/m³ or similar</p>	<p>COPPER PIPE FIRE RESISTANCE EI 180 C/U (E 240 C/U)</p> <p>≥ 150MM MASONRY OR CONCRETE WALLS</p> <p>Annular ring width 10mm</p> <p>≥ 20mm pipe insulation of stone wool ≥ 80kg/m³ ≥ 100cm on both sides</p> <p>FR Acrylic depth ≥ 15mm</p> <p>Copper pipe ≤ Ø54mm</p> <p>Stone wool depth ≥ 20mm, density ≥ 40kg/m³ or similar</p>
<p>ALUPEX PIPE FIRE RESISTANCE EI 60 C/U (E 240 C/U)</p> <p>≥ 150MM MASONRY OR CONCRETE WALLS</p> <p>Maximum aperture 300x300mm</p> <p>≥ 25mm Protecta Mineral Fibre BIO ≥ 60cm on both sides</p> <p>FR Acrylic depth ≥ 25mm</p> <p>Alupex composite pipe ≤ Ø75mm</p> <p>Stone wool depth ≥ 25mm, density ≥ 40kg/m³ or similar</p>	<p>ALUPEX PIPE FIRE RESISTANCE EI 120 C/U (E 120 C/U)</p> <p>≥ 150MM MASONRY OR CONCRETE WALLS</p> <p>Maximum annular ring width 30mm</p> <p>≥ 25mm Protecta Mineral Fibre BIO ≥ 60cm on both sides</p> <p>FR Acrylic depth ≥ 15mm</p> <p>Alupex composite pipe ≤ Ø75mm</p> <p>Stone wool depth ≥ 20mm, density ≥ 40kg/m³ or similar</p>
<p>PVC PLASTIC PIPE FIRE RESISTANCE EI 240 U/C (E 240 U/C)</p> <p>≥ 150MM MASONRY OR CONCRETE WALLS</p> <p>Maximum annular ring width 30mm</p> <p>Stone wool depth ≥ 25mm, density ≥ 35kg/m³ or similar on both sides</p> <p>FR Acrylic depth ≥ 25mm on both sides</p> <p>PVC-U & PVC-C pipe ≤ Ø32mm with wall thickness 1.0-1.6mm</p>	<p>PE PLASTIC PIPE FIRE RESISTANCE EI 240 C/U (E 240 C/U)</p> <p>≥ 150MM MASONRY OR CONCRETE WALLS</p> <p>Maximum annular ring width 30mm</p> <p>Stone wool depth ≥ 25mm, density ≥ 35kg/m³ or similar on both sides</p> <p>FR Acrylic depth ≥ 25mm on both sides</p> <p>PE, ABS & SAN+PVC pipe ≤ Ø32mm with wall thickness 2.0mm</p>

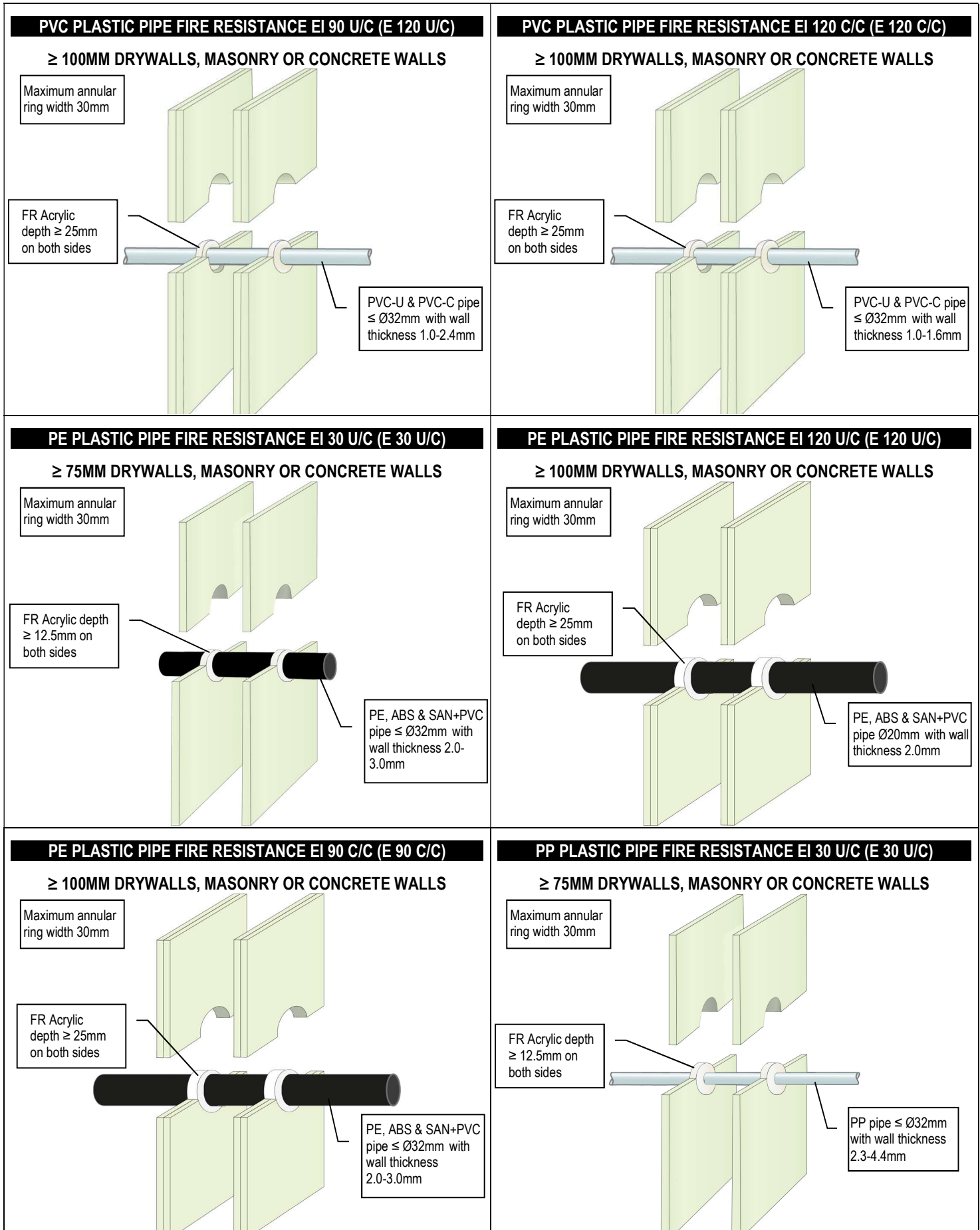


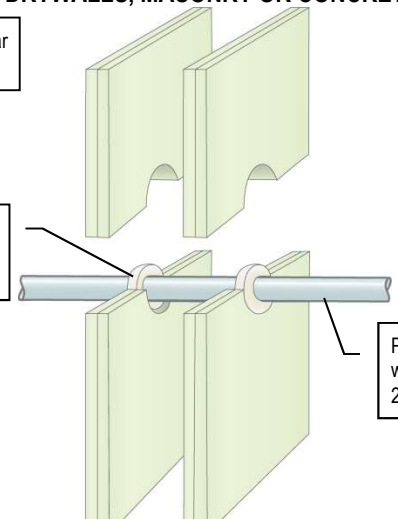
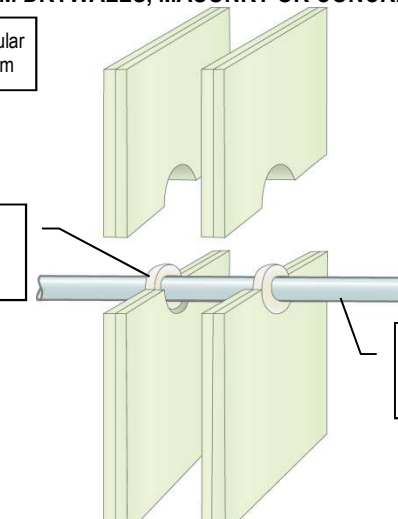
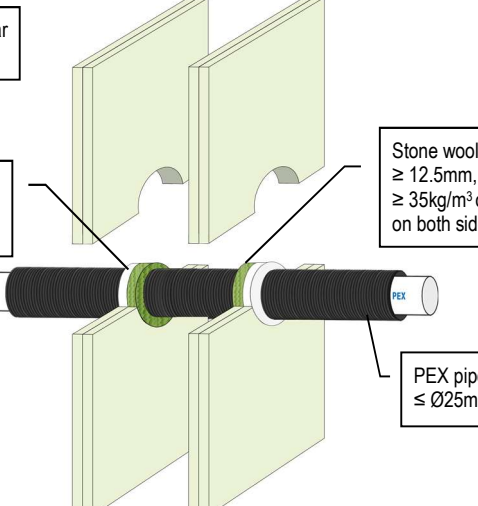
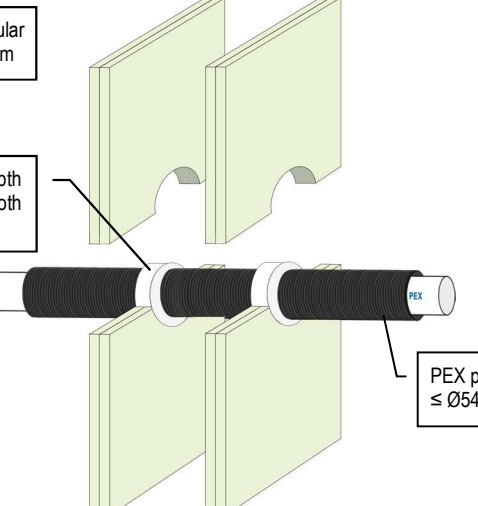
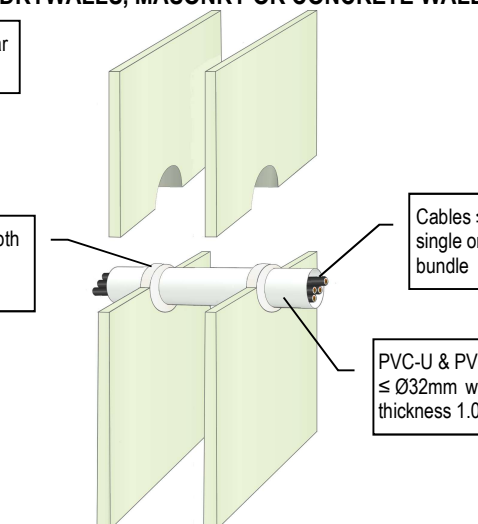










<p>PP PLASTIC PIPE FIRE RESISTANCE EI 120 U/C (E 120 U/C)</p> <p>≥ 100MM DRYWALLS, MASONRY OR CONCRETE WALLS</p> <p>Maximum annular ring width 30mm</p> <p>FR Acrylic depth ≥ 25mm on both sides</p> <p>PP pipe Ø20mm with wall thickness 2.2mm</p> 	<p>PP PLASTIC PIPE FIRE RESISTANCE EI 60 C/C (E 60 C/C)</p> <p>≥ 100MM DRYWALLS, MASONRY OR CONCRETE WALLS</p> <p>Maximum annular ring width 30mm</p> <p>FR Acrylic depth ≥ 25mm on both sides</p> <p>PP pipe ≤ Ø32mm with wall thickness 1.8-4.4mm</p> 
<p>PEX PIPE-IN-PIPE SYSTEM FIRE RESISTANCE EI 120 C/C (E 120)</p> <p>≥ 100MM DRYWALLS, MASONRY OR CONCRETE WALLS</p> <p>Maximum annular ring width 30mm</p> <p>FR Acrylic depth ≥ 12.5mm on both sides</p> <p>Stone wool depth ≥ 12.5mm, density ≥ 35kg/m³ or similar on both sides</p> <p>PEX pipe ≤ Ø25mm</p> 	<p>PEX PIPE-IN-PIPE SYSTEM FIRE RESISTANCE EI 45 C/C (E 60)</p> <p>≥ 100MM DRYWALLS, MASONRY OR CONCRETE WALLS</p> <p>Maximum annular ring width 30mm</p> <p>FR Acrylic depth ≥ 25mm on both sides</p> <p>PEX pipe ≤ Ø54mm</p> 
<p>PVC CONDUIT FIRE RESISTANCE EI 45 U/C (E 60 U/C)</p> <p>≥ 75MM DRYWALLS, MASONRY OR CONCRETE WALLS</p> <p>Maximum annular ring width 30mm</p> <p>FR Acrylic depth ≥ 12.5mm on both sides</p> <p>Cables ≤ Ø21mm single or in a bundle</p> <p>PVC-U & PVC-C pipe ≤ Ø32mm with wall thickness 1.0-1.8mm</p> 	<p>PVC CONDUIT FIRE RESISTANCE EI 120 U/C (E 120 U/C)</p> <p>≥ 100MM DRYWALLS, MASONRY OR CONCRETE WALLS</p> <p>Maximum annular ring width 30mm</p> <p>FR Acrylic depth ≥ 25mm on both sides</p> <p>Cables ≤ Ø21mm single or in a bundle</p> <p>PVC-U & PVC-C pipe ≤ Ø40mm with wall thickness 1.0-1.9mm</p> 