


Drawing nr.	Contents of drawing	Date	Rev. date
SPA30-FIRE-1E-EN	Fastening to floor, vertical or horizontal installation	17.12.2012	30.11.2019
SPA30-FIRE-2E-EN	Fastening to floor, vertical or horizontal installation	30.11.2019	
SPA31-FIRE-1E-EN	Vertical joint, horizontal installation	17.12.2012	30.11.2019
SPA31-FIRE-2E-EN	Vertical joint, horizontal installation	17.12.2012	30.11.2019
SPA31-FIRE-3E-EN	Vertical joint, horizontal installation	17.12.2012	30.11.2019
SPA32-FIRE-1E-EN	Corner, vertical installation, ≤ EI30	17.12.2012	30.11.2019
SPA32-FIRE-2E-EN	Corner, horizontal installation	17.12.2012	30.11.2019
SPA32-FIRE-3E-EN	Corner, horizontal or vertical installation	30.11.2019	
SPA32-FIRE-4E-EN	Corner, vertical installation, ≤ EI60	30.11.2019	
SPA33-FIRE-1E-EN	Fastening to roof, horizontal installation	17.12.2012	30.11.2019
SPA33-FIRE-2E-EN	Fastening to roof, vertical installation	17.12.2012	30.11.2019
SPA35-FIRE-1E-EN	Fastening to load-bearing roof sheet, roof sheet perpendicular to compartment wall	30.11.2019	
SPA35-FIRE-2E-EN	Fastening to load-bearing roof sheet, roof sheet parallel to compartment wall	30.11.2019	
SPA35-FIRE-3E-EN	Fastening to load-bearing roof sheet, roof sheet parallel to compartment wall (alternative solution)	30.11.2019	
SPA36-FIRE-1E-EN	Fastening to ext. wall, horizontal or vertical installation	30.11.2019	
SPA36-FIRE-2E-EN	Fastening to ext. wall, vertical installation, ≤ EI60	30.11.2019	
SPA36-FIRE-3E-EN	Fastening to ext. wall, vertical installation, ≤ EI30	30.11.2019	

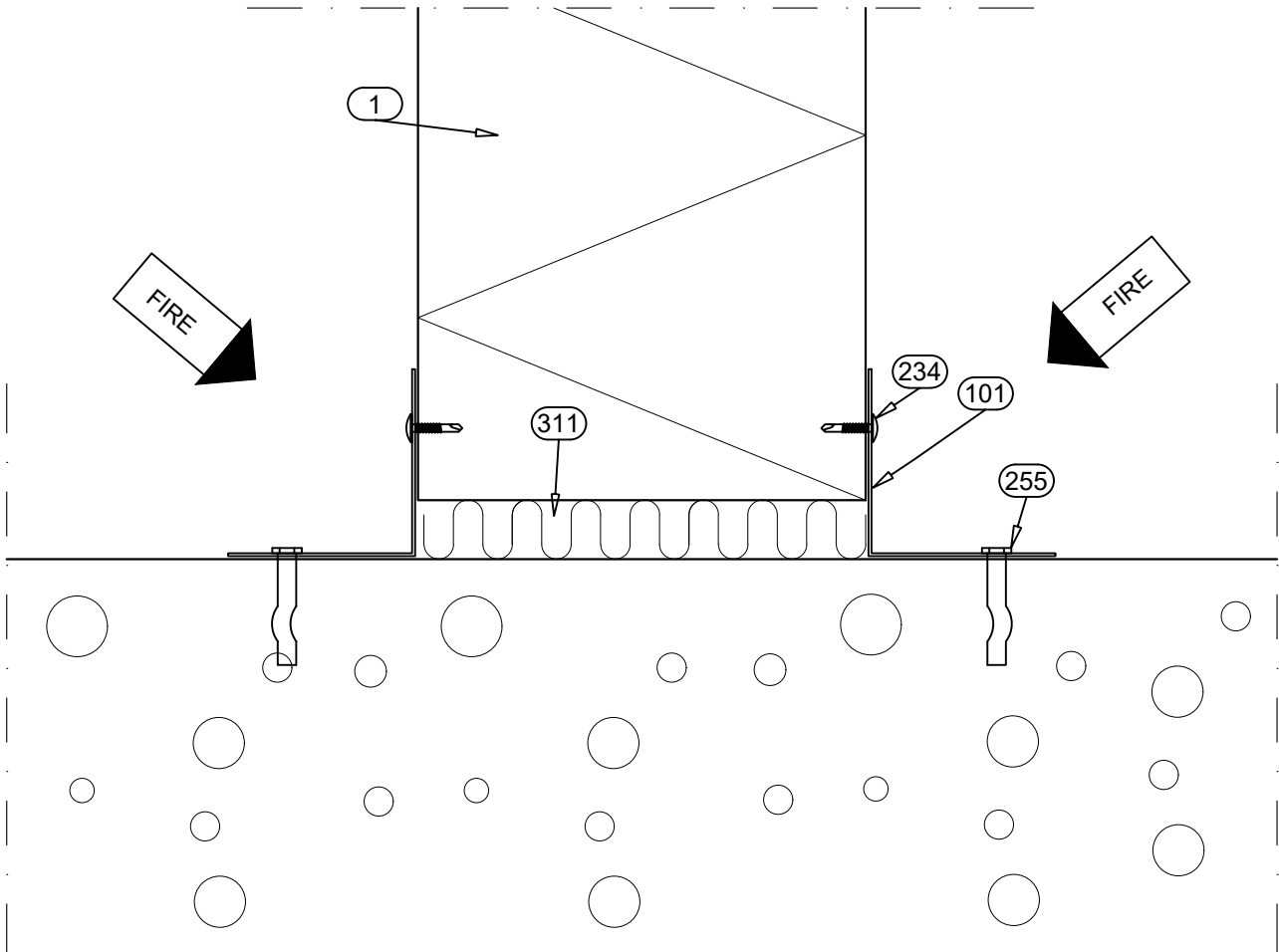
City sector	Block	Site/Reg. nr.	File nr.		
Building type		Drawing type			Nr.
Building, Name and address		Contents of drawing			Scale
 Ruukki Construction Oy Vimpelintie 661 FI - 62900 ALAJÄRVI FINLAND		Sandwich panel SPA compartment details Principle details			
Date	Designer	Work nr.	Work nr.	Drw. nr.	Rev.
30.11.2019					
Drawn by	Checked				
Ruukki					



Contents of drawing

Sandwich panel compartment details,
vertical or horizontal installation
Fastening to floor, vertical section

Date 17.12.2012	Rev. date 30.11.2019	Work nr. .	Drawing nr. SPA30-FIRE-1E-EN A	Rev.
Drawn by Ruukki	Rev. A		File nr. SPA30-FIRE-1E-EN.dwg	
Scale 1:2,5	Building .			



- 001. Sandwich panel SPA, vertical or horizontal installation
- 101. /EA1FC1/ Fastening corner flashing
- 234. Flashing screw c/c 300 mm
- 255. Spike-fastener
- 311. /EAWS5657850/ Mineral wool

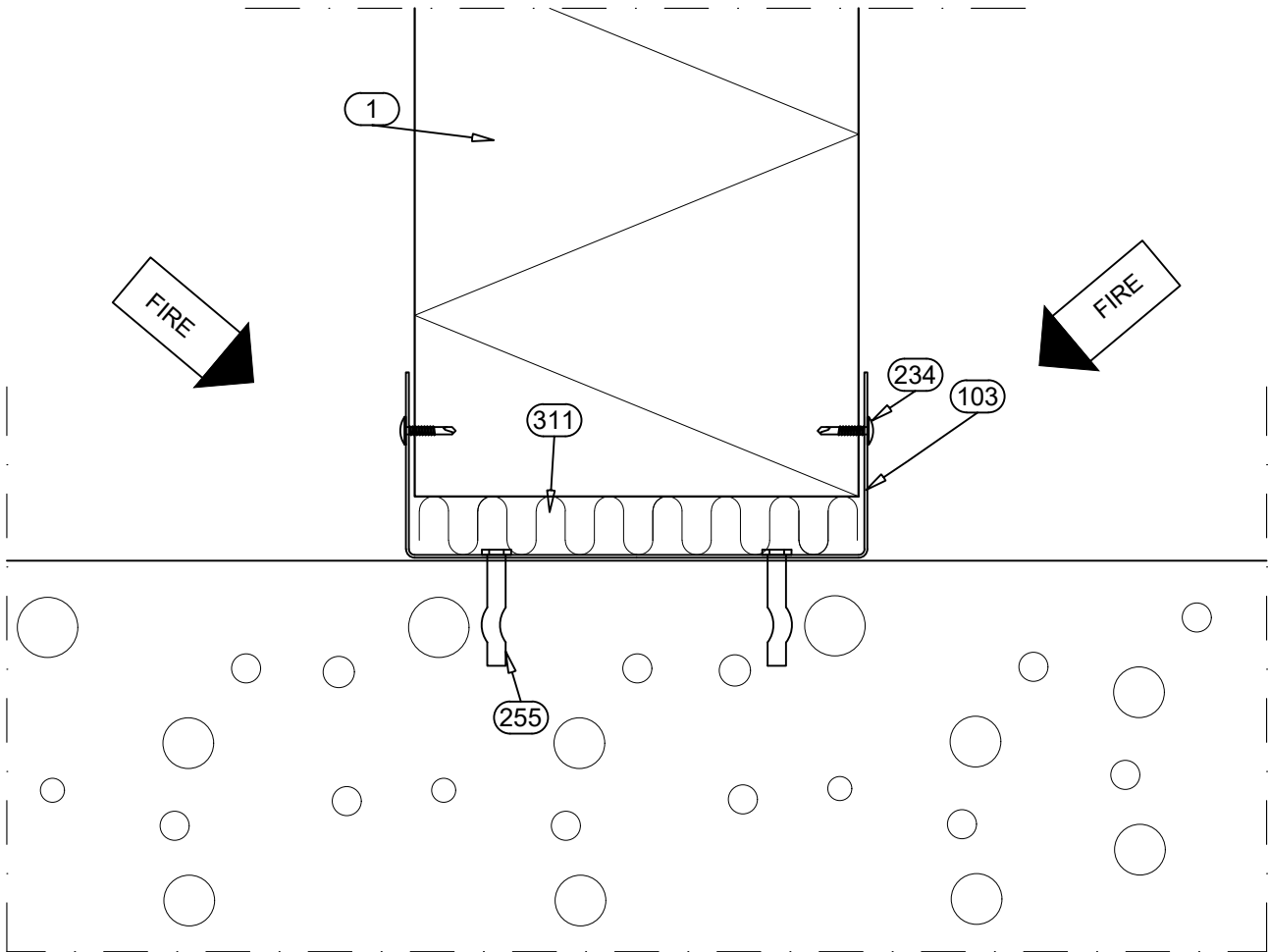
Ruukki's delivery

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Contents of drawing

Sandwich panel compartment details,
vertical or horizontal installation
Fastening to floor, vertical section,
alternative solution

Date	30.11.2019	Rev. date	.	Work nr.	.	Drawing nr.	SPA30-FIRE-2E-EN	Rev.	.
Drawn by	Ruukki	Rev.	.						
Scale	1:2,5	Building	.			File nr.	SPA30-FIRE-2E-EN.dwg		



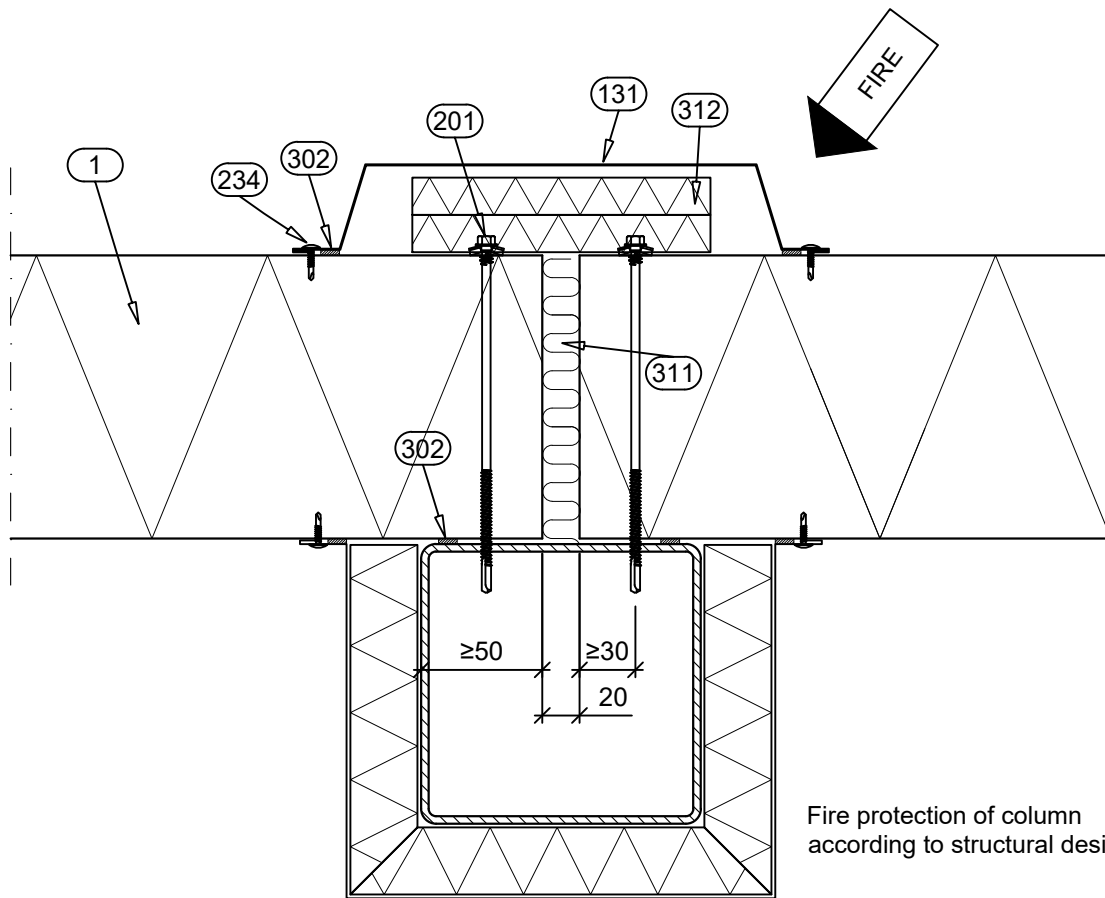
- 001. Sandwich panel SPA, vertical or horizontal installation
- 103. Termo Purlin, U-profile
- 234. Flashing screw c/c 300 mm
- 255. Spike-fastener
- 311. /EAWS5657850/ Mineral wool

Ruukki's delivery

Date 17.12.2012	Rev. date 30.11.2019	Work nr.	Drawing nr. SPA31-FIRE-1E-EN B
Drawn by Ruukki	Rev. B		Rev.
Scale 1:4	Building		File nr. SPA31-FIRE-1E-EN.dwg

Fire protection wool FPS 17, mechanical fastening, thickness (mm)

Structure	EI60	EI90	EI120	EI180	EI240
Wall	-	20	20	30	50
Ceiling	20	20	30	n/a	n/a



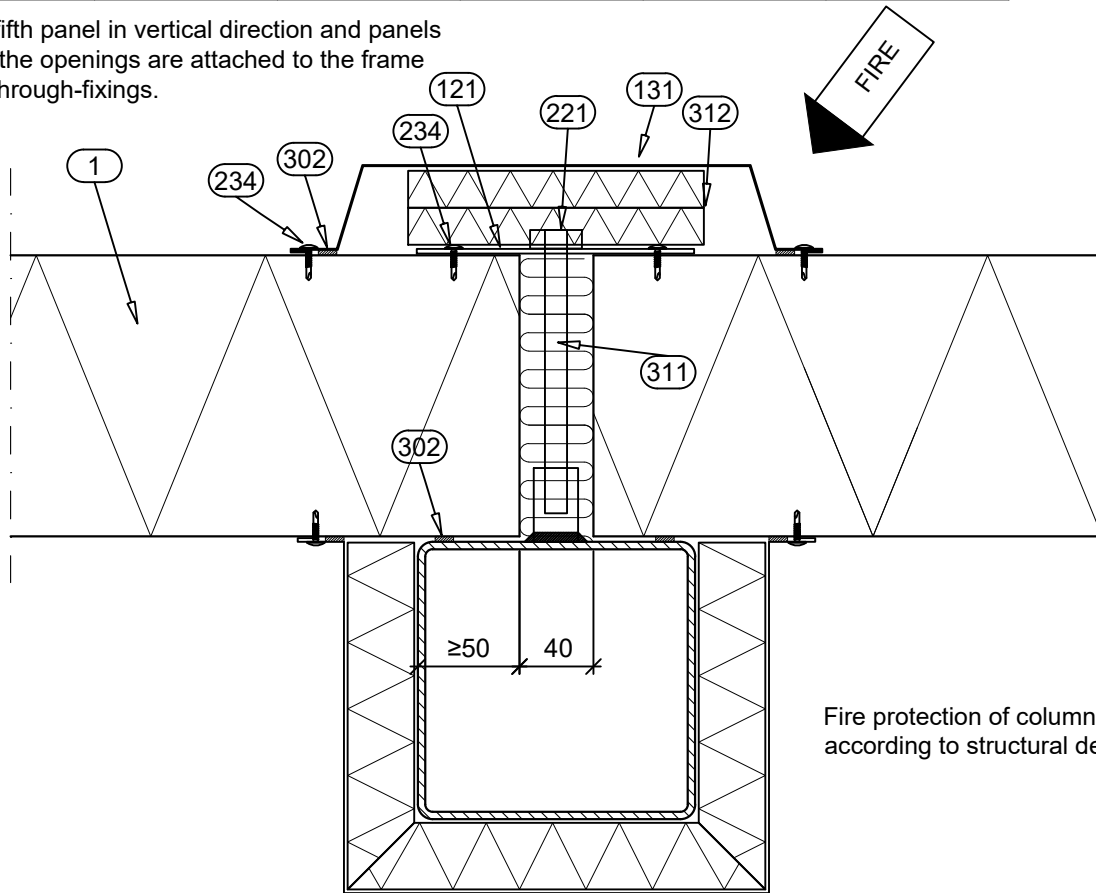
Fire protection of column
according to structural designer.

- 001. Sandwich panel SPA, horizontal installation
- 131. /EA1R18/ Cover flashing
- 201. Self-drilling panel screw, washer with sealing
- 234. Flashing screw c/c 300 mm
- 302. /EA3SS410/ Sealing band
- 311. /EAWS5657850/ Mineral wool
- 312. /EAFW206001200/ Fire protection wool, mechanical fastening to surface
- Ruukki's delivery

Date 17.12.2012	Rev. date 30.11.2019	Work nr.	Drawing nr. SPA31-FIRE-2E-EN	Rev.
Drawn by Ruukki	Rev. B	.		
Scale 1:4	Building	.	File nr. SPA31-FIRE-2E-EN.dwg	

Fire protection wool FPS 17, mechanical fastening, thickness (mm)					
Structure	EI60	EI90	EI120	EI180	EI240
Wall	-	20	20	30	50
Ceiling	20	20	30	n/a	n/a

Every fifth panel in vertical direction and panels above the openings are attached to the frame using through-fixings.



Fire protection of column according to structural designer.

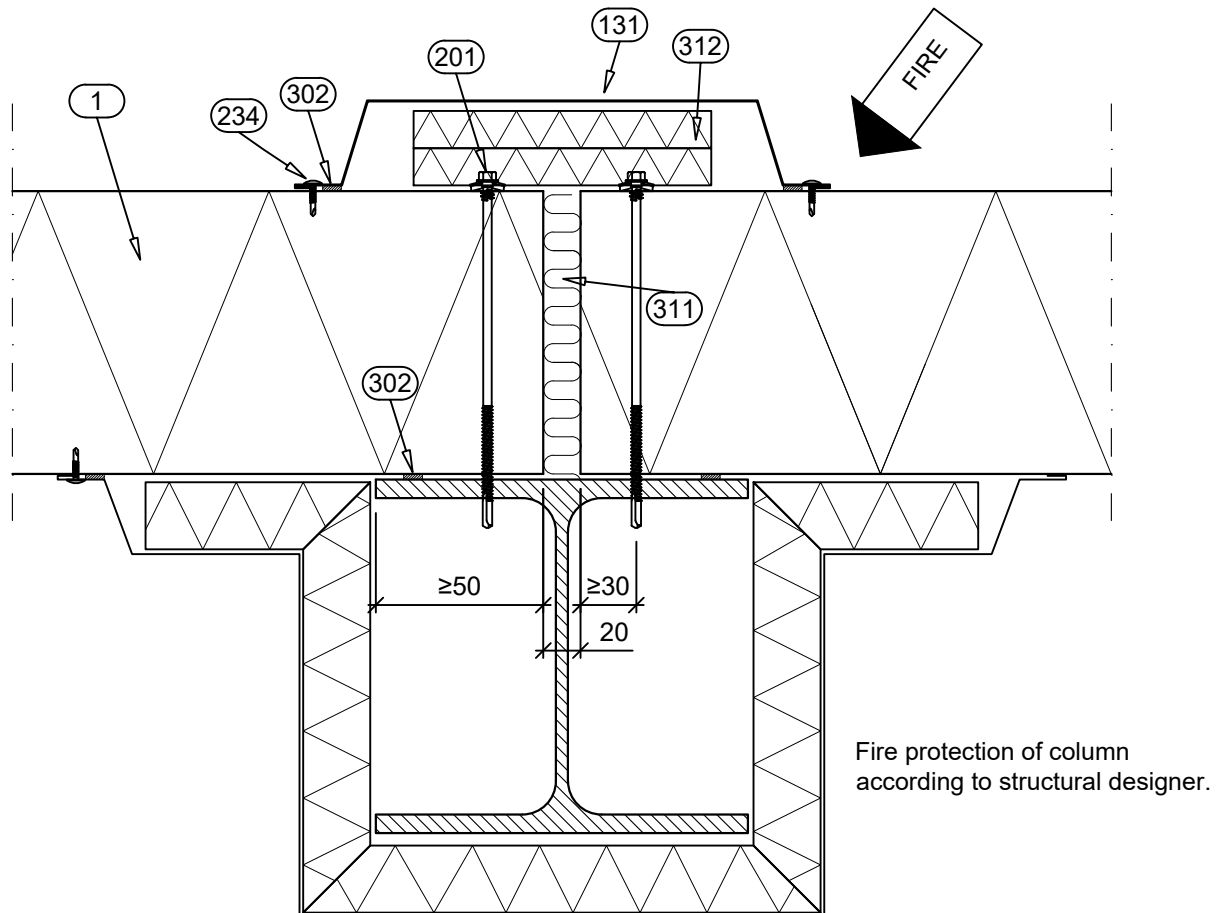
- 001. Sandwich panel SPA, horizontal installation
- 121. /EA6FP___/ Fastening plate
- 131. /EA1R18/ Cover flashing
- 221. Internal thread socket + hex bolt
- 234. Flashing screw c/c 300 mm
- 302. /EA3SS410/ Sealing band
- 311. /EAWS5657850/ Mineral wool
- 312. /EAFW206001200/ Fire protection wool, mechanical fastening to surface
- Ruukki's delivery



Date 17.12.2012	Rev. date 30.11.2019	Work nr.	Drawing nr. SPA31-FIRE-3E-EN B	Rev.
Drawn by Ruukki	Rev. B			
Scale 1:4	Building		File nr. SPA31-FIRE-3E-EN.dwg	

Fire protection wool FPS 17, mechanical fastening, thickness (mm)

Structure	EI60	EI90	EI120	EI180	EI240
Wall	-	20	20	30	50
Ceiling	20	20	30	n/a	n/a



- 001. Sandwich panel SPA, horizontal installation
- 131. /EA1R18/ Cover flashing
- 201. Self-drilling panel screw, washer with sealing
- 234. Flashing screw c/c 300 mm
- 302. /EA3SS410/ Sealing band
- 311. /EAWS5657850/ Mineral wool
- 312. /EAFW206001200/ Fire protection wool, mechanical fastening to surface
- Ruukki's delivery



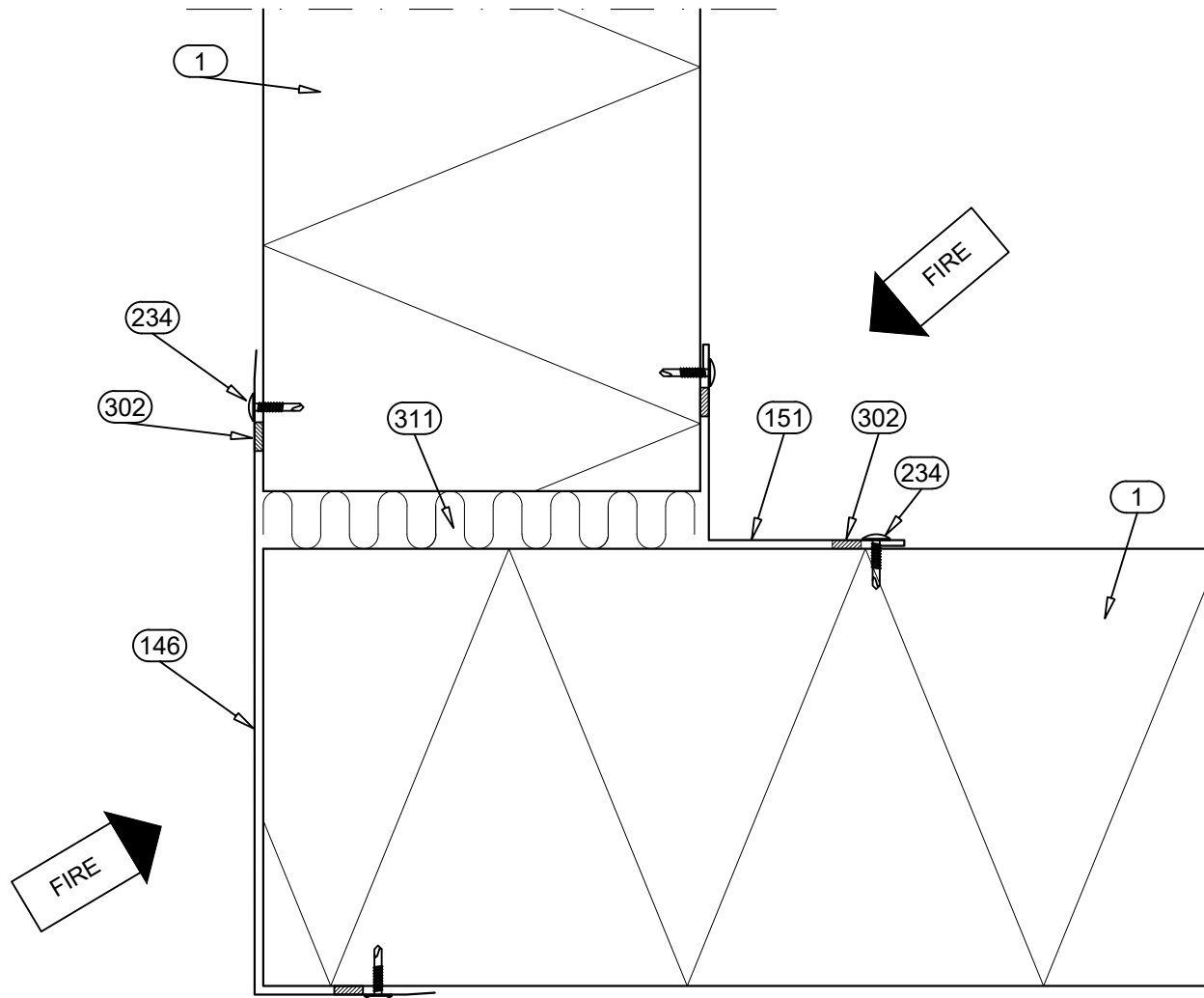
RUUKKI

Contents of drawing

Sandwich panel compartment details,
vertical installation
Corner, horizontal section, \leq EI30

Date 17.12.2012	Rev. date 30.11.2019	Work nr.	Drawing nr. SPA32-FIRE-1E-EN A	Rev.
Drawn by Ruukki	Rev. A	.		
Scale 1:2,5	Building .		File nr. SPA32-FIRE-1E-EN.dwg	

Note! This detail is only applicable when requirements for compartment walls are EI30 or less, and when vertical panels don't require additional support structures (see roof fastening detail SPA33-FIRE-2E-EN). Otherwise, see corner details SPA32-FIRE-3E-EN and SPA32-FIRE-4E-EN.



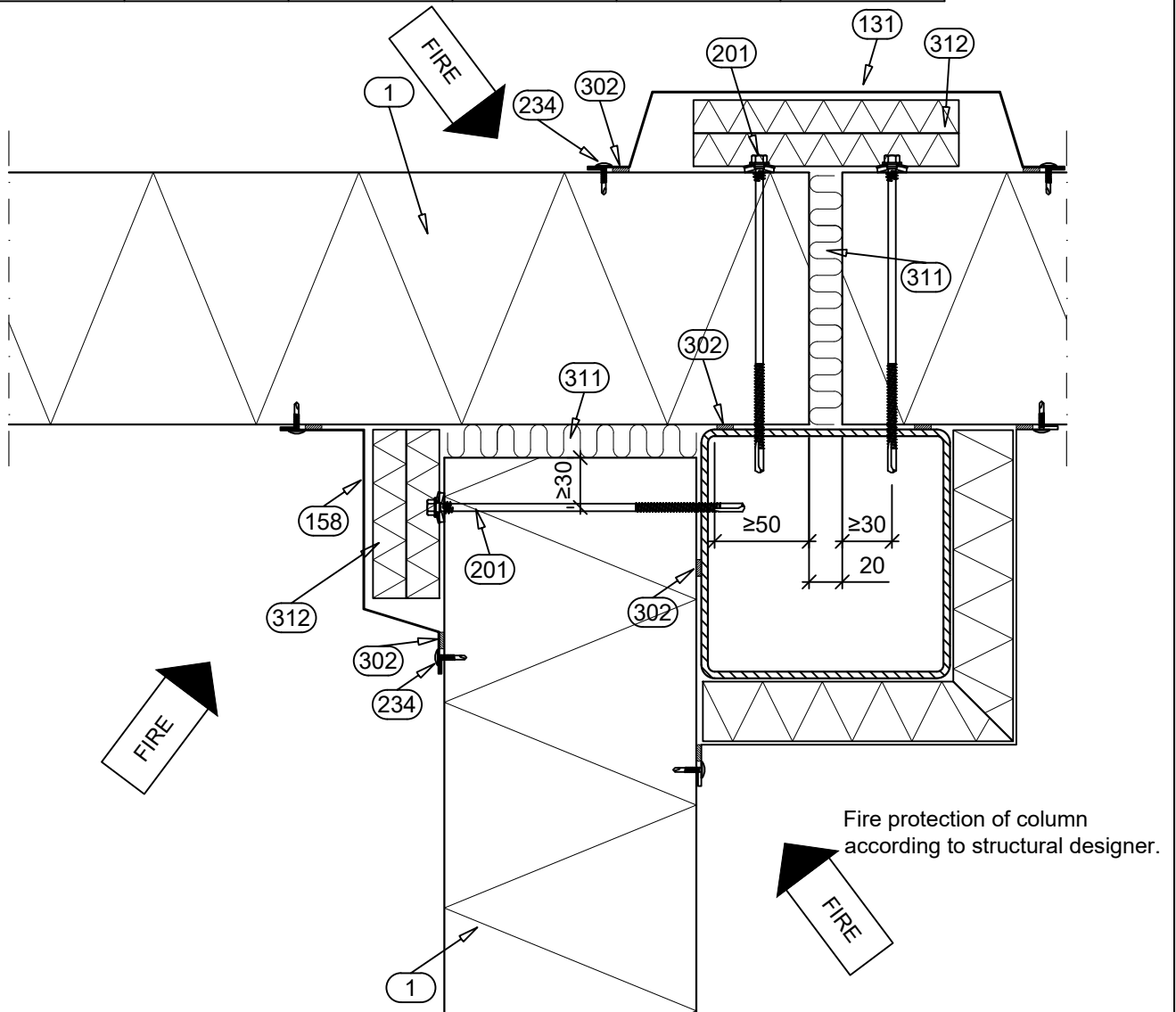
- 001. Sandwich panel SPA, vertical installation
- 146. /EA1EC9-___/ External corner flashing
- 151. /EA1IC2/ Internal corner flashing
- 234. Flashing screw c/c 300 mm
- 302. /EA3SS410/ Sealing band
- 311. /EAWS5657850/ Mineral wool

Ruukki's delivery

Date 17.12.2012	Rev. date 30.11.2019	Work nr.	Drawing nr. SPA32-FIRE-2E-EN B	Rev.
Drawn by Ruukki	Rev. B			
Scale 1:4	Building		File nr. SPA32-FIRE-2E-EN.dwg	

Fire protection wool FPS 17, mechanical fastening, thickness (mm)

Structure	EI60	EI90	EI120	EI180	EI240
Wall	-	20	20	30	50
Ceiling	20	20	30	n/a	n/a

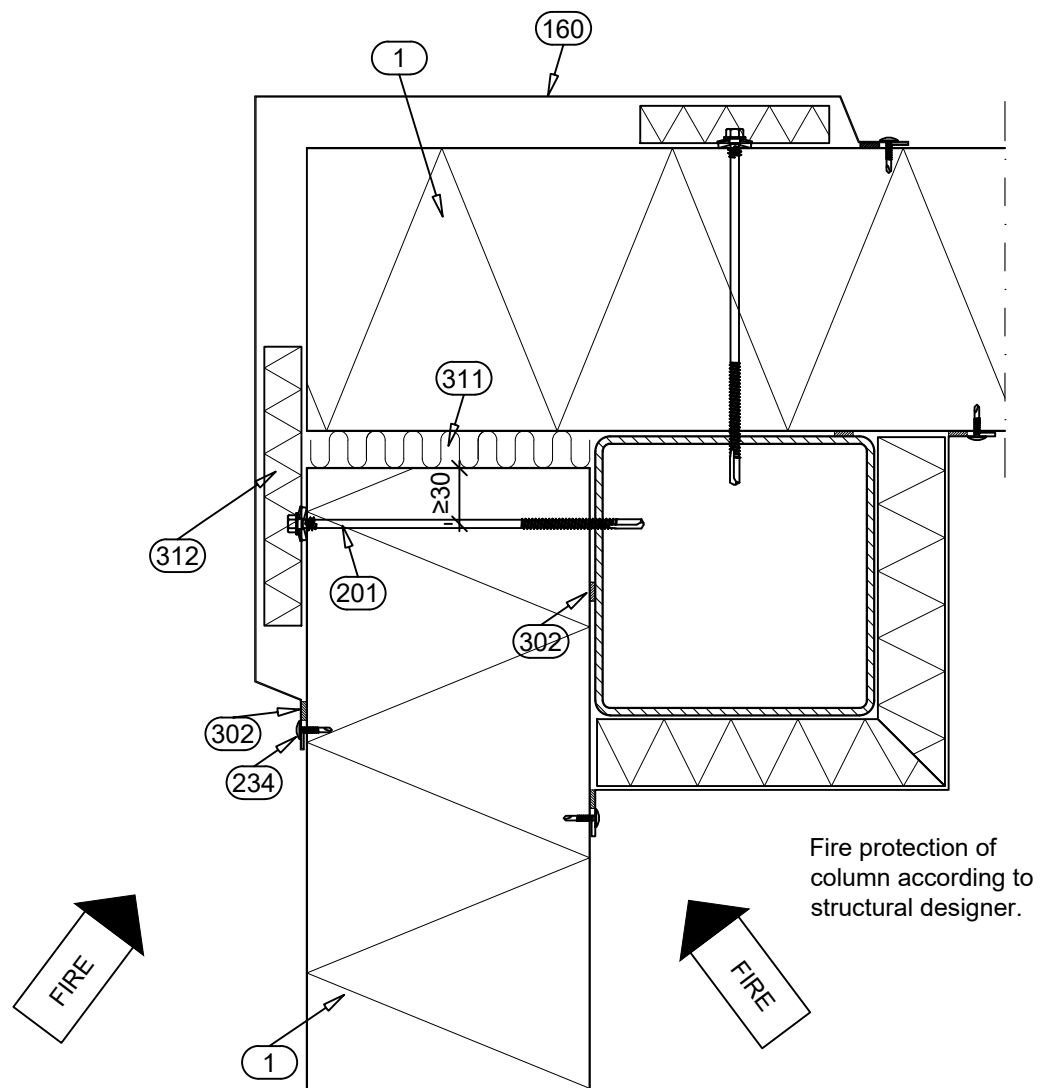


- | | |
|--|---|
| <input type="checkbox"/> 001. Sandwich panel SPA, horizontal installation | <input type="checkbox"/> 234. Flashing screw c/c 300 mm |
| <input type="checkbox"/> 131. /EA1R18/ Cover flashing | <input type="checkbox"/> 302. /EA3SS410/ Sealing band |
| <input type="checkbox"/> 158. /EA1R23/ Cover flashing | <input type="checkbox"/> 311. /EAWS5657850/ Mineral wool |
| <input type="checkbox"/> 201. Self-drilling panel screw, washer with sealing | <input type="checkbox"/> 312. /EAFW206001200/ Fire protection wool, mechanical fastening to surface |
| <input checked="" type="checkbox"/> Ruukki's delivery | |

Date 30.11.2019	Rev. date .	Work nr. .	Drawing nr. SPA32-FIRE-3E-EN	Rev. .
Drawn by Ruukki	Rev. .			
Scale 1:4	Building .		File nr. SPA32-FIRE-3E-EN.dwg	

Fire protection wool FPS 17, mechanical fastening, thickness (mm)

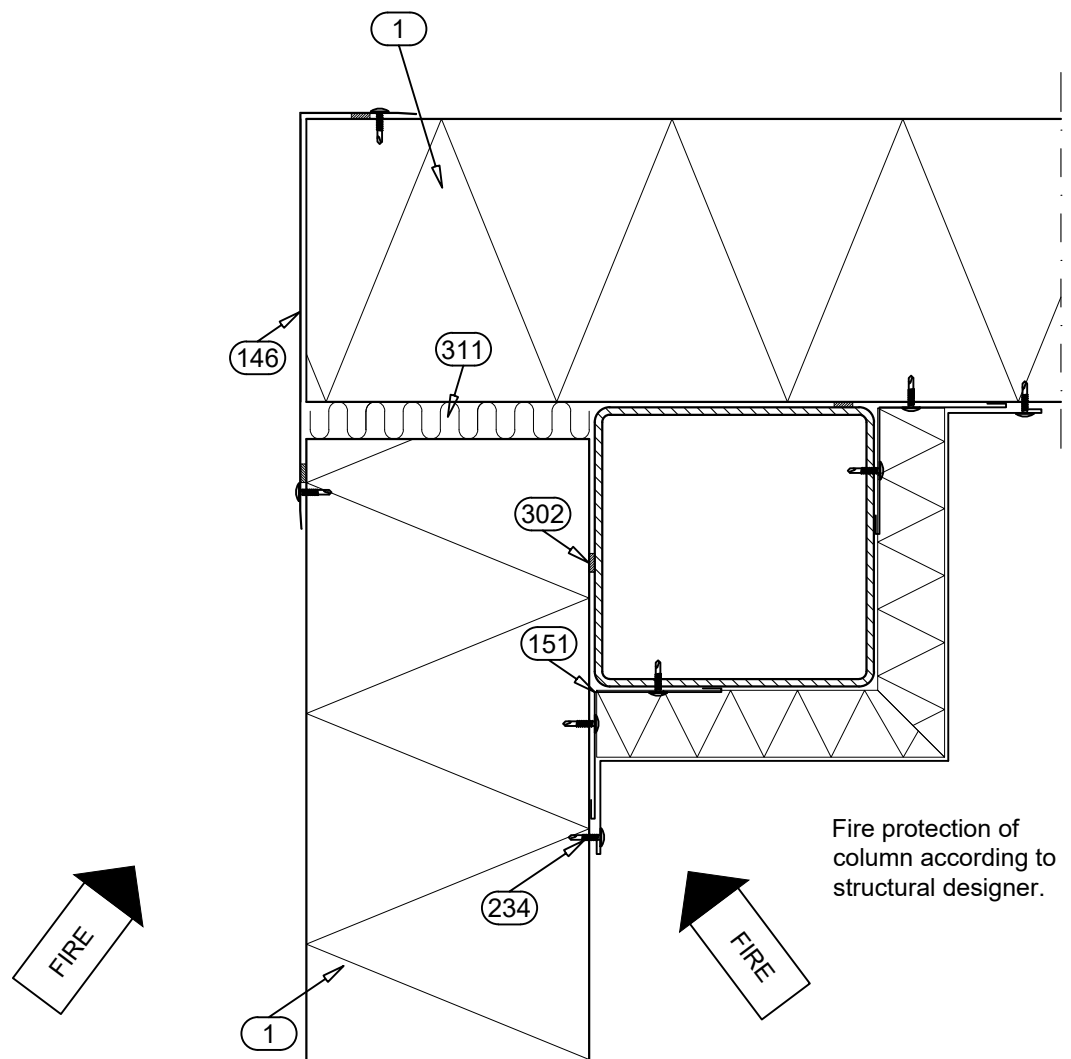
Structure	EI60	EI90	EI120	EI180	EI240
Wall	-	20	20	30	50



- | | |
|---|---|
| <input type="checkbox"/> 001. Sandwich panel SPA, horizontal or vertical installation | <input type="checkbox"/> 234. Flashing screw c/c 300 mm |
| <input type="checkbox"/> 160. /EA1EC4/ External corner flashing (if panel thickness > 200 mm, or fire protection wool > 20 mm, flashing must be designed according to dimensions) | <input type="checkbox"/> 302. /EA3SS410/ Sealing band |
| <input type="checkbox"/> 201. Self-drilling panel screw, washer with sealing | <input type="checkbox"/> 311. /EAWS5657850/ Mineral wool |
| <input checked="" type="checkbox"/> Ruukki's delivery | <input type="checkbox"/> 312. /EAFW206001200/ Fire protection wool, mechanical fastening to surface |

Date 30.11.2019	Rev. date .	Work nr. .	Drawing nr. SPA32-FIRE-4E-EN	Rev. .
Drawn by Ruukki	Rev. .			
Scale 1:4	Building .		File nr. SPA32-FIRE-4E-EN.dwg	

Note! This detail is only applicable when requirements for compartment walls are EI60 or less.
Otherwise, see SPA32-FIRE-3E-EN.

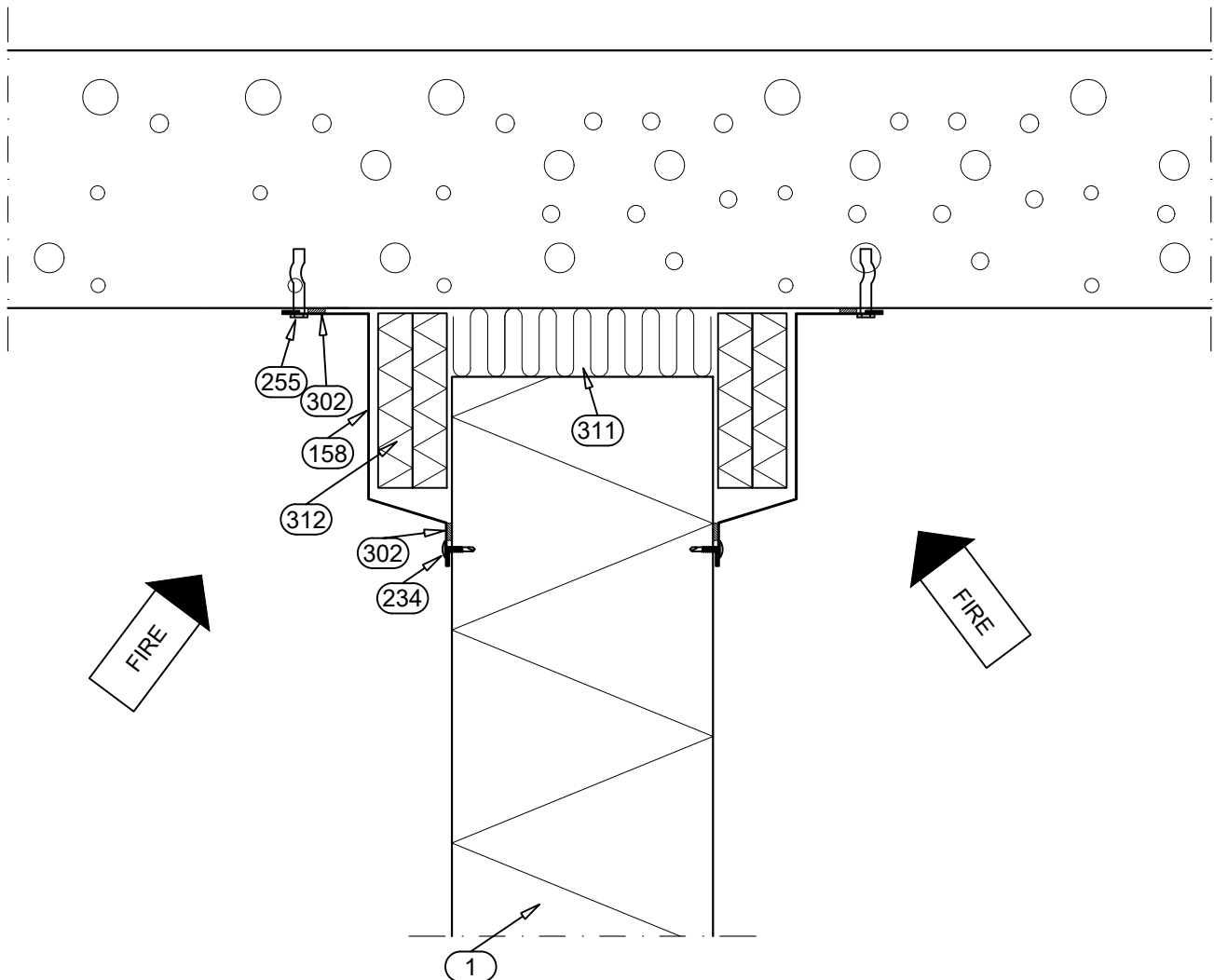


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|---|--|
| <input type="checkbox"/> 001. Sandwich panel SPA, vertical installation | <input type="checkbox"/> 234. Flashing screw c/c 300 mm |
| <input type="checkbox"/> 146. /EA1EC9-___/ External corner flashing | <input type="checkbox"/> 235. Screw (according to structural designer) |
| <input type="checkbox"/> 151. /EA1IC2/ Internal corner flashing | <input type="checkbox"/> 311. /EAWS5657850/ Mineral wool |
| <input type="checkbox"/> 302. /EA3SS410/ Sealing band | |
| <input checked="" type="checkbox"/> Ruukki's delivery | |

Date 17.12.2012	Rev. date 30.11.2019	Work nr.	Drawing nr. SPA33-FIRE-1E-EN B	Rev.
Drawn by Ruukki	Rev. B	.		
Scale 1:4	Building		File nr. SPA33-FIRE-1E-EN.dwg	

Fire protection wool FPS 17, mechanical fastening, thickness (mm)

Structure	EI60	EI90	EI120	EI180	EI240
Wall	-	20	20	30	50
Ceiling	20	20	30	n/a	n/a

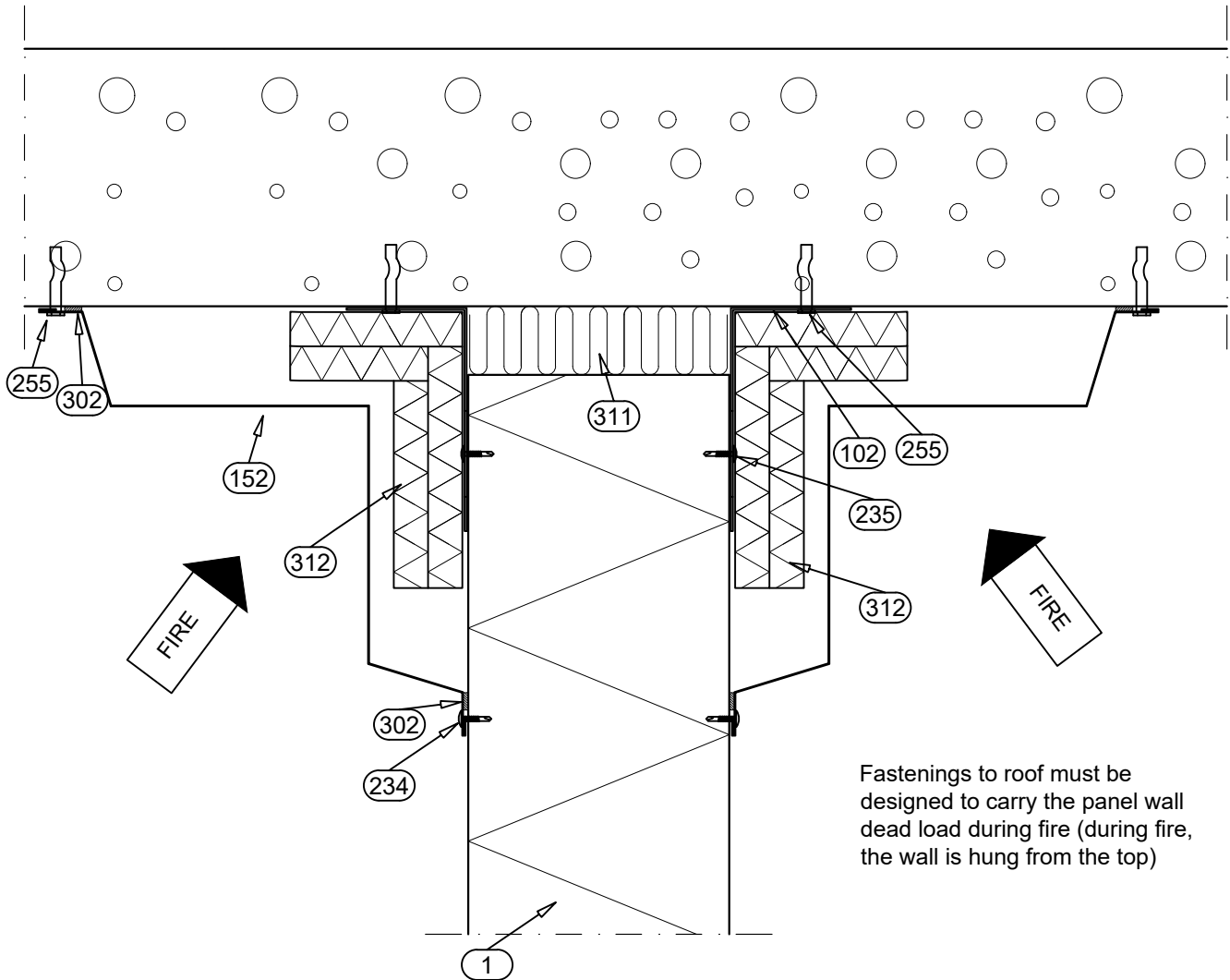


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|---|--|
| <input type="checkbox"/> 001. Sandwich panel SPA, horizontal installation | <input type="checkbox"/> 302. /EA3SS410/ Sealing band |
| <input type="checkbox"/> 158. /EA1R23/ Cover flashing | <input type="checkbox"/> 311. /EAWS5657850/ Mineral wool |
| <input type="checkbox"/> 234. Flashing screw c/c 300 mm | <input type="checkbox"/> 312. /EAFW206001200/ Fire protection wool,
mechanical fastening to surface |
| <input type="checkbox"/> 255. Spike-fastener | |
| <input checked="" type="checkbox"/> Ruukki's delivery | |

Date 17.12.2012	Rev. date 30.11.2019	Work nr.	Drawing nr. SPA33-FIRE-2E-EN C	Rev.
Drawn by Ruukki	Rev. C			
Scale 1:4	Building		File nr. SPA33-FIRE-2E-EN.dwg	

Fire protection wool FPS 17, mechanical fastening, thickness (mm)

Structure	EI60	EI90	EI120	EI180	EI240
Wall	-	20	20	30	50
Ceiling	20	20	30	n/a	n/a

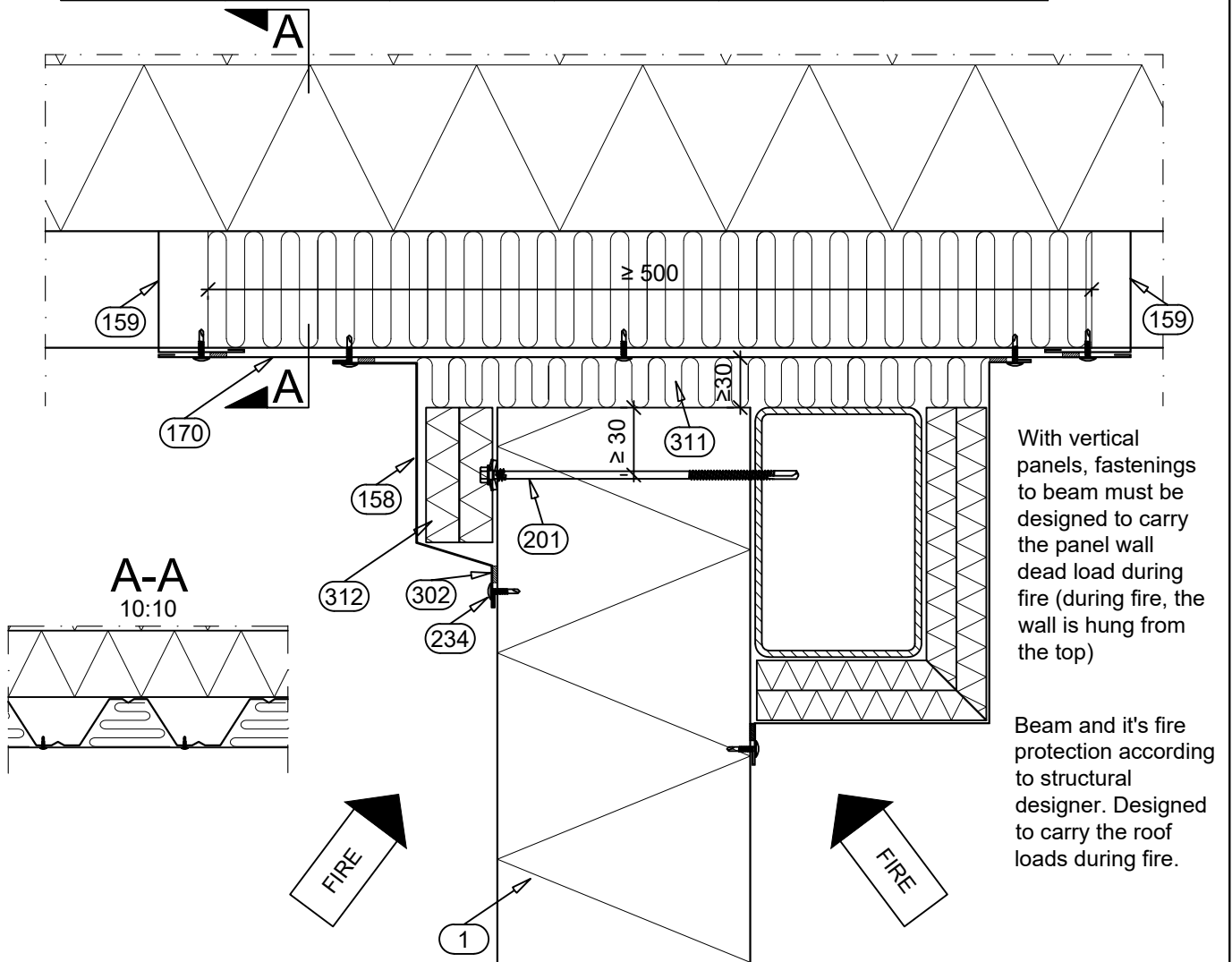


- | | |
|---|---|
| <input type="checkbox"/> 001. Sandwich panel SPA, horizontal installation | <input type="checkbox"/> 235. Screw (according to structural designer) |
| <input type="checkbox"/> 102. /EA1FC5/ L-corner | <input type="checkbox"/> 255. Spike-fastener (according to structural designer) |
| <input type="checkbox"/> 152. /EA1R21/ Roof flashing | <input type="checkbox"/> 302. /EA3SS410/ Sealing band |
| <input type="checkbox"/> 234. Flashing screw c/c 300 mm | <input type="checkbox"/> 311. /EAWS5657850/ Mineral wool |
| <input checked="" type="checkbox"/> Ruukki's delivery | <input type="checkbox"/> 312. /EAFW206001200/ Fire protection wool, mechanical fastening to surface |

Date 30.11.2019	Rev. date .	Work nr. .	Drawing nr. Rev. SPA35-FIRE-1E-EN
Drawn by Ruukki	Rev. .		
Scale 1:4	Building .		File nr. SPA35-FIRE-1E-EN.dwg

Note! This detail is used for cases where the fire resistance of the load-bearing roof sheets is much lower (e.g R15) than the fire resistance of the compartment walls (EI30-E240). In these cases the compartment walls cannot be supported only from the load-bearing sheets; additional beam is required to carry the roof loads during fire.

Fire protection wool FPS 17, mechanical fastening, thickness (mm)					
Structure	EI60	EI90	EI120	EI180	EI240
Wall	-	20	20	30	50

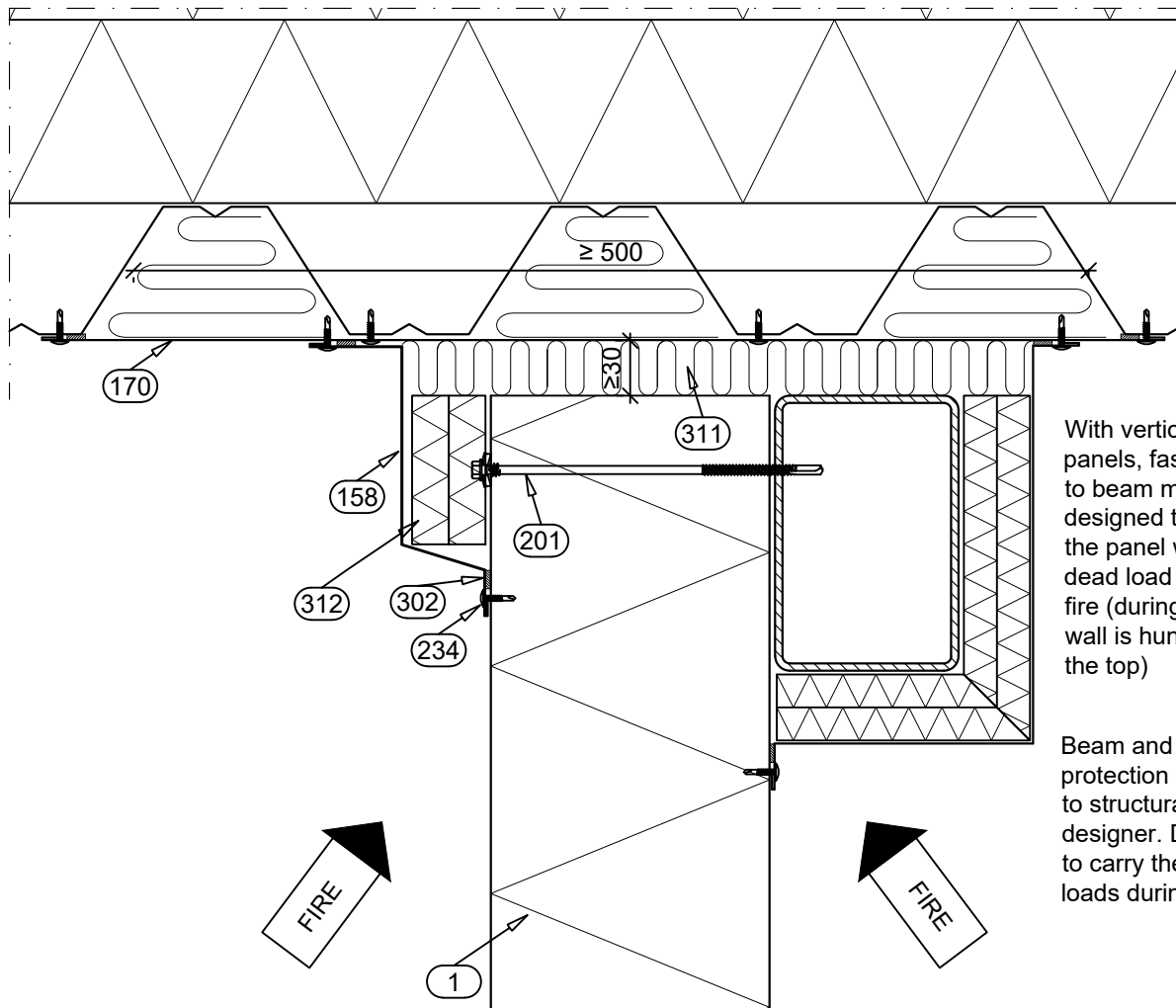


- | | |
|---|---|
| <input type="checkbox"/> 001. Sandwich panel SPA, horizontal or vertical installation | <input type="checkbox"/> 234. Flashing screw c/c 300 mm |
| <input type="checkbox"/> 158. /EA1R23/ Cover flashing | <input type="checkbox"/> 302. /EA3SS410/ Sealing band |
| <input type="checkbox"/> 159. /EA1CFT_____LB/ Closure flashing, bent | <input type="checkbox"/> 311. /EAWS5657850/ Mineral wool |
| <input type="checkbox"/> 170. Flat steel sheet | <input type="checkbox"/> 312. /EAFW206001200/ Fire protection wool, mechanical fastening to surface |
| <input type="checkbox"/> 201. Self-drilling panel screw, washer with sealing | |
| <input checked="" type="checkbox"/> Ruukki's delivery | |

Date 30.11.2019	Rev. date .	Work nr. .	Drawing nr. Rev. SPA35-FIRE-2E-EN
Drawn by Ruukki	Rev. .		
Scale 1:4	Building .		File nr. SPA35-FIRE-2E-EN.dwg

Note! This detail is used for cases where the fire resistance of the load-bearing roof sheets is much lower (e.g R15) than the fire resistance of the compartment walls (EI30-E240). In these cases the compartment walls cannot be supported only from the load-bearing sheets; additional beam is required to carry the roof loads during fire. Although, when roof sheet span is parallel to compartment walls and load transfer to compartment walls is prevented by fire protecting the roof sheet, alternative detail can be used (see SPA35-FIRE-3E-EN).

Fire protection wool FPS 17, mechanical fastening, thickness (mm)					
Structure	EI60	EI90	EI120	EI180	EI240
Wall	-	20	20	30	50



With vertical panels, fastenings to beam must be designed to carry the panel wall dead load during fire (during fire, the wall is hung from the top)

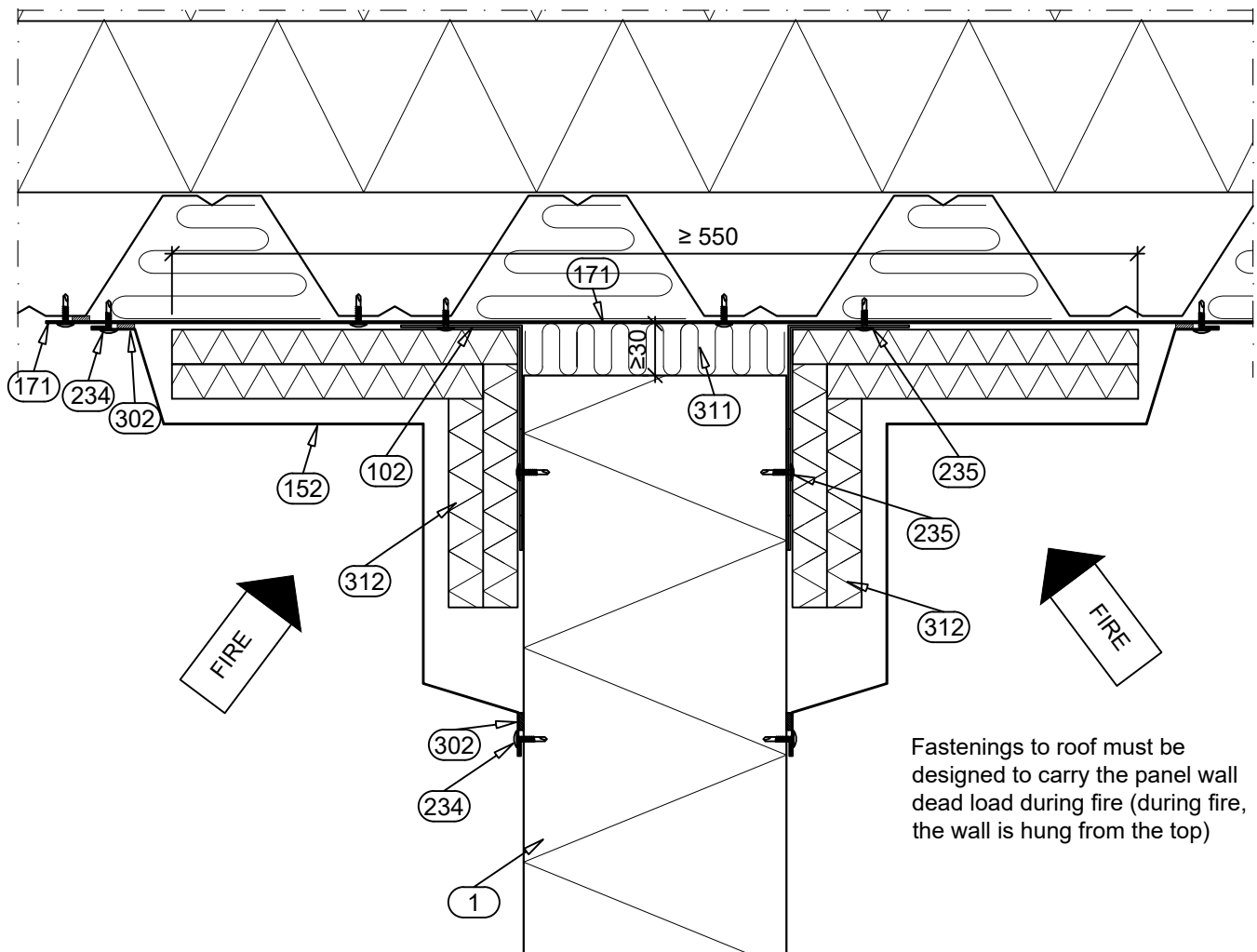
Beam and it's fire protection according to structural designer. Designed to carry the roof loads during fire.

- | | |
|---|---|
| <input type="checkbox"/> 001. Sandwich panel SPA, horizontal or vertical installation | <input type="checkbox"/> 234. Flashing screw c/c 300 mm |
| <input type="checkbox"/> 158. /EA1R23/ Cover flashing | <input type="checkbox"/> 302. /EA3SS410/ Sealing band |
| <input type="checkbox"/> 170. Flat steel sheet | <input type="checkbox"/> 311. /EAWS5657850/ Mineral wool |
| <input type="checkbox"/> 201. Self-drilling panel screw, washer with sealing | <input type="checkbox"/> 312. /EAFW206001200/ Fire protection wool, mechanical fastening to surface |
| <input checked="" type="checkbox"/> Ruukki's delivery | |

Date	30.11.2019	Rev. date	.	Work nr.		Drawing nr.	Rev.
Drawn by	Ruukki	Rev.	.			SPA35-FIRE-3E-EN	
Scale	1:4	Building	.			File nr.	SPA35-FIRE-3E-EN.dwg

Note! This detail is only applicable when load-bearing roof sheet span is parallel to compartment walls and load transfer to compartment walls during fire is prevented by fire protecting the roof sheet. Otherwise, see SPA35-FIRE-1E-EN and SPA35-FIRE-2E-EN.

Fire protection wool FPS 17, mechanical fastening, thickness (mm)					
Structure	EI60	EI90	EI120	EI180	EI240
Wall	-	20	20	30	50
Ceiling	20	20	30	n/a	n/a



Fastenings to roof must be designed to carry the panel wall dead load during fire (during fire, the wall is hung from the top)

- | | |
|---|---|
| <input type="checkbox"/> 001. Sandwich panel SPA, horizontal or vertical installation | <input type="checkbox"/> 235. Screw (according to structural designer) |
| <input type="checkbox"/> 102. /EA1FC5/ L-corner | <input type="checkbox"/> 302. /EA3SS410/ Sealing band |
| <input type="checkbox"/> 152. /EA1R21/ Roof flashing | <input type="checkbox"/> 311. /EAWS5657850/ Mineral wool |
| <input type="checkbox"/> 171. Flat steel sheet, t = 1.0 - 1.5 mm | <input type="checkbox"/> 312. /EAFW206001200/ Fire protection wool, mechanical fastening to surface |
| <input type="checkbox"/> 234. Flashing screw c/c 300 mm | |
| <input checked="" type="checkbox"/> Ruukki's delivery | |

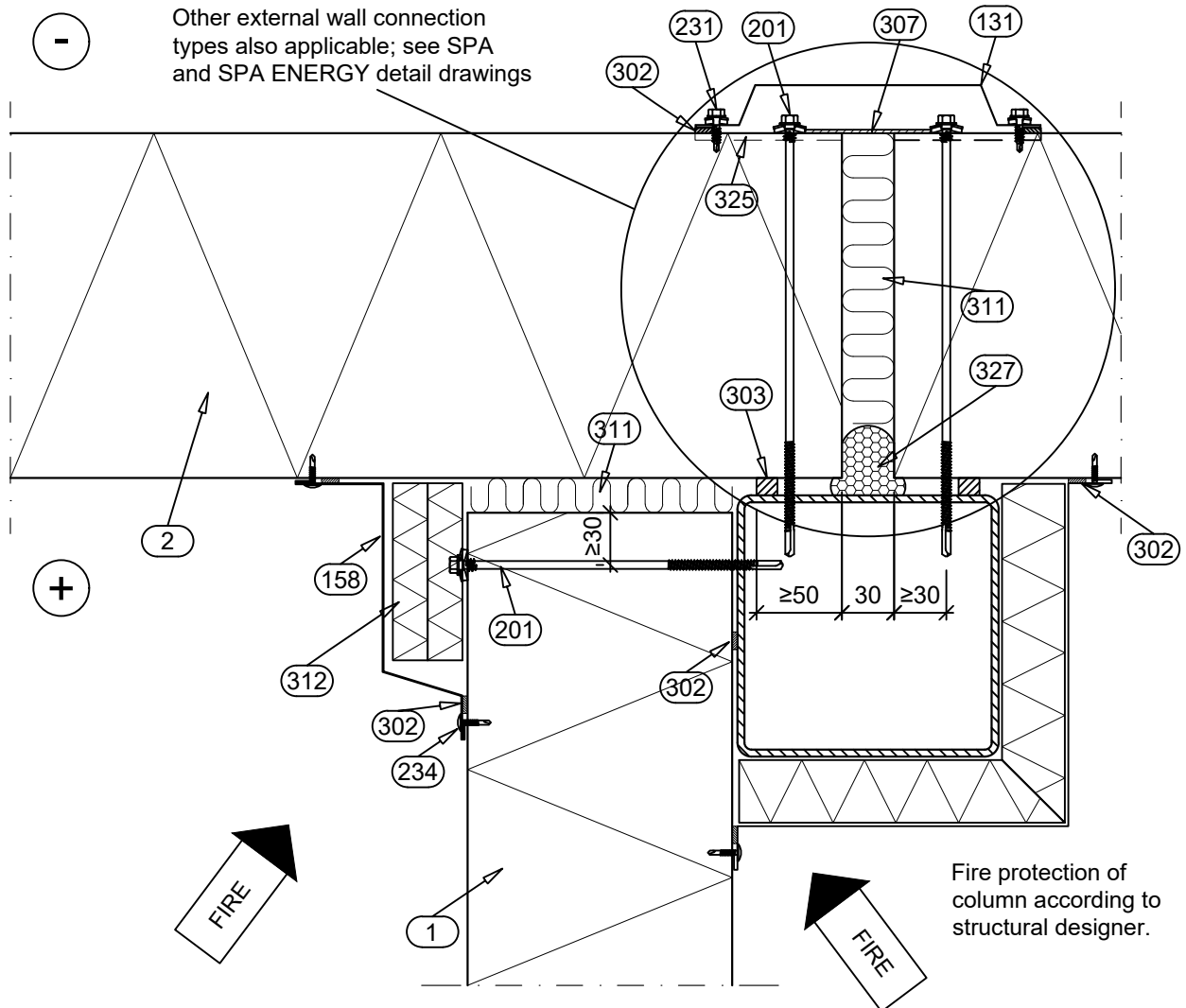
Date 30.11.2019	Rev. date	Work nr.	Drawing nr. SPA36-FIRE-1E-EN	Rev.
Drawn by Ruukki	Rev.			
Scale 1:4	Building		File nr. SPA36-FIRE-1E-EN.dwg	

Fire protection wool FPS 17, mechanical fastening, thickness (mm)

Structure	EI60	EI90	EI120	EI180	EI240
Wall	-	20	20	30	50



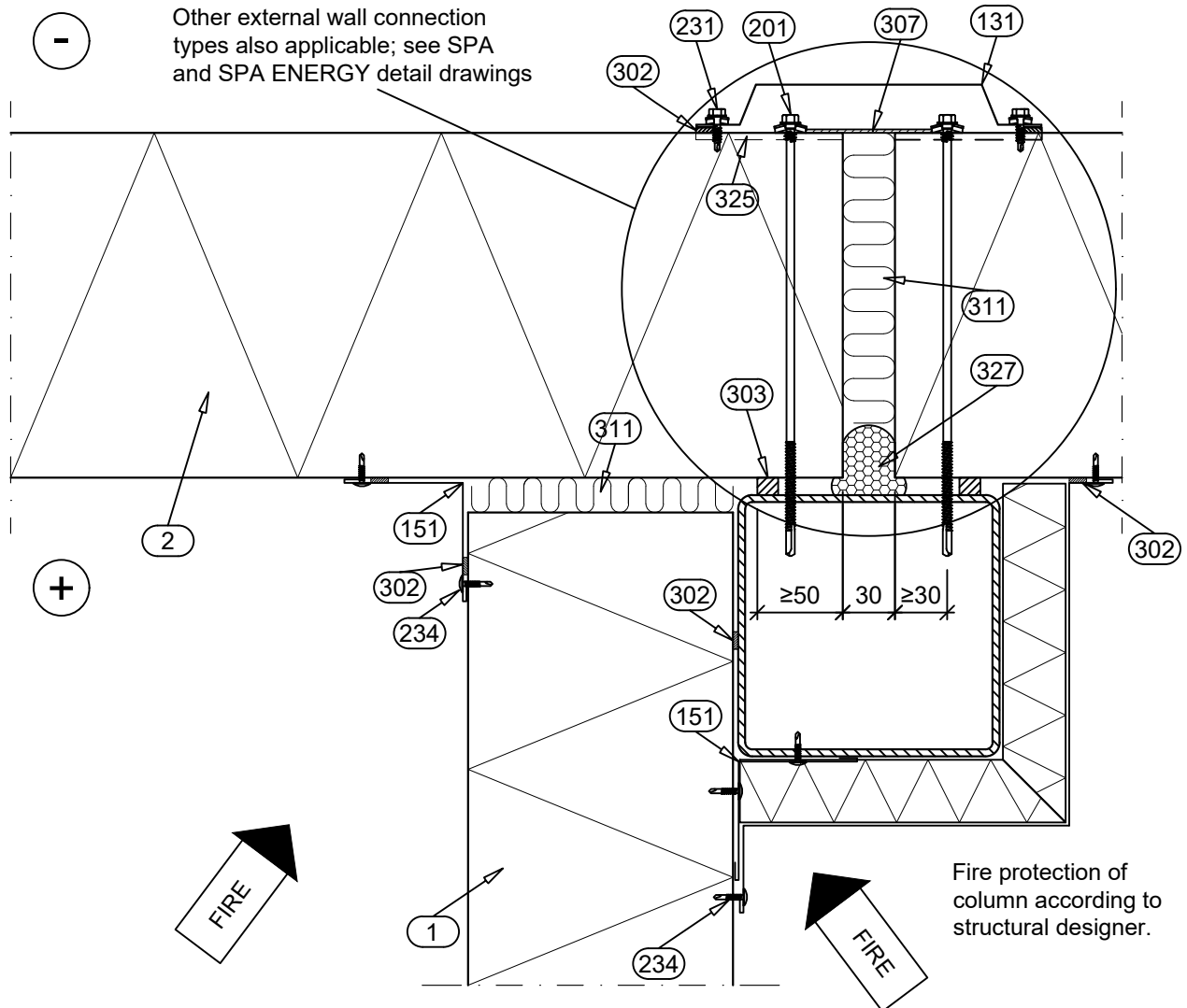
Other external wall connection types also applicable; see SPA and SPA ENERGY detail drawings



- | | |
|---|---|
| <input type="checkbox"/> 001. Sandwich panel SPA, horizontal or vertical installation | <input type="checkbox"/> 302. /EA3SS410/ Sealing band, or /EA3SS510/ Sealing band EPDM for flashing (for demanding climate conditions e.g. coastal areas) |
| <input type="checkbox"/> 002. Sandwich panel SPA, SPA ENERGY or SPA LIFE, horizontal installation | <input type="checkbox"/> 303. /EA3SS1210/ Sealing strip |
| <input type="checkbox"/> 131. /EA1JV1/ Vertical joint flashing | <input type="checkbox"/> 307. /EA3JSN7525/ Joint sealing Nordic |
| <input type="checkbox"/> 158. /EA1R23/ Cover flashing | <input type="checkbox"/> 311. /EAWS5657850/ Mineral wool |
| <input type="checkbox"/> 201. Self-drilling panel screw, washer with sealing | <input type="checkbox"/> 312. /EAFW206001200/ Fire protection wool, mechanical fastening to surface |
| <input type="checkbox"/> 231. Flashing fastener, washer with sealing | <input type="checkbox"/> 325. /EA3SM310___/ Elastic sealant during inst. to outer female groove in length equivalent to vertical joint flashing width |
| <input type="checkbox"/> 234. Flashing screw c/c 300 mm | <input type="checkbox"/> 327. Elastic polyurethane foam |
| <input checked="" type="checkbox"/> Ruukki's delivery | |

Date 30.11.2019	Rev. date .	Work nr. .	Drawing nr. SPA36-FIRE-2E-EN	Rev. .
Drawn by Ruukki	Rev. .			
Scale 1:4	Building .		File nr. SPA36-FIRE-2E-EN.dwg	

Note! This detail is only applicable when requirements for compartment walls are EI60 or less.
Otherwise, see SPA36-FIRE-1E-EN.



- 001. Sandwich panel SPA, vertical installation
- 002. Sandwich panel SPA, SPA ENERGY or SPA LIFE, horizontal installation
- 131. /EA1JV1/ Vertical joint flashing
- 151. /EA1IC2/ Internal corner flashing
- 201. Self-drilling panel screw, washer with sealing
- 231. Flashing fastener, washer with sealing
- 234. Flashing screw c/c 300 mm
- 302. /EA3SS410/ Sealing band, or /EA3SS510/ Sealing band EPDM for flashing (for demanding climate conditions e.g. coastal areas)
- 303. /EA3SS1210/ Sealing strip
- 307. /EA3JSN7525/ Joint sealing Nordic
- 311. /EAWS5657850/ Mineral wool
- 325. /EA3SM310___/ Elastic sealant during inst. to outer female groove in length equivalent to vertical joint flashing width
- 327. Elastic polyurethane foam

Ruukki's delivery

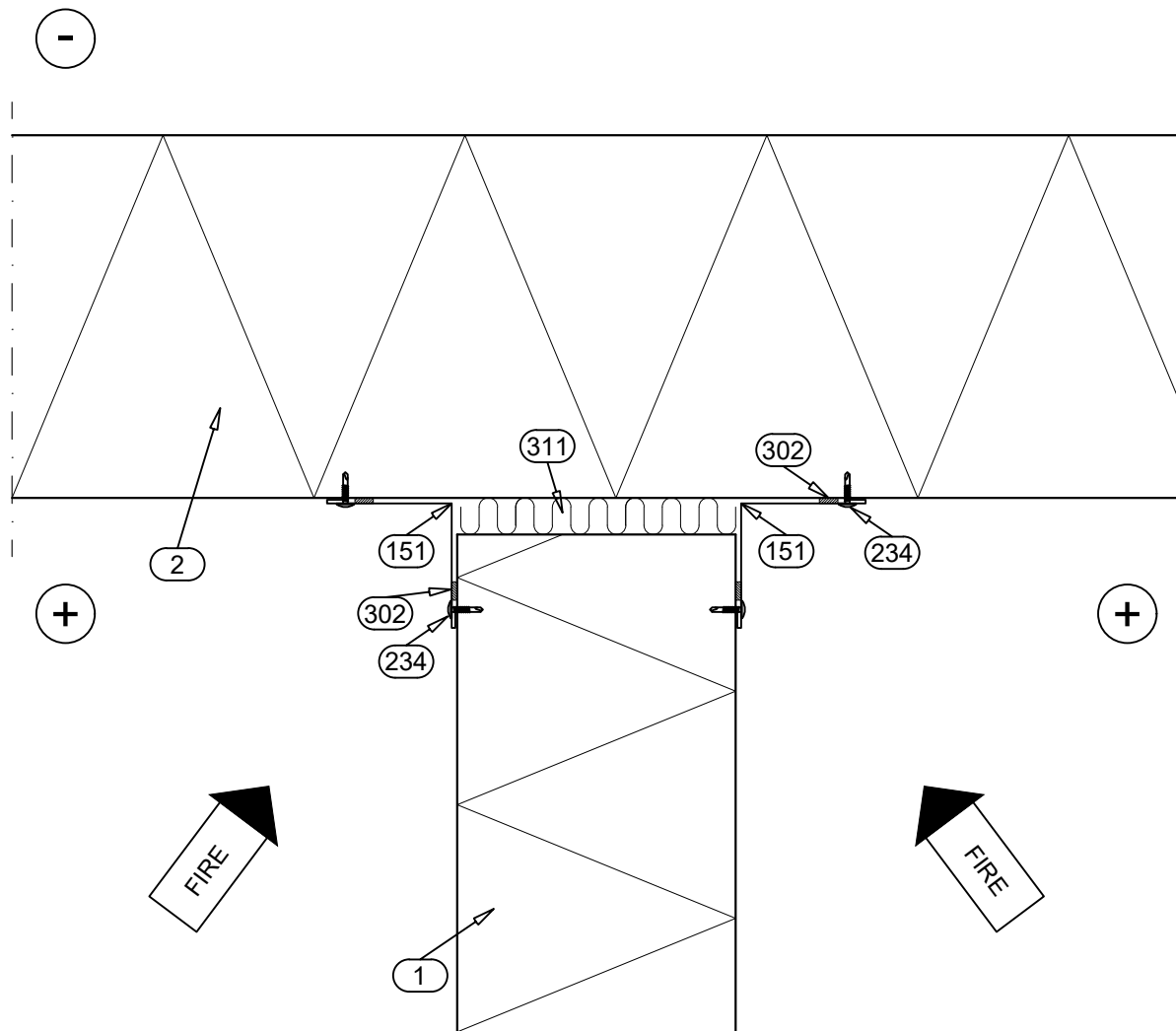
RUUKKI

Contents of drawing

Sandwich panel compartment details,
vertical installation, Fastening to external
wall, horizontal section, \leq EI30

Date	30.11.2019	Rev. date	.	Work nr.	.	Drawing nr.	Rev.
Drawn by	Ruukki	Rev.	.			SPA36-FIRE-3E-EN	
Scale	1:4	Building	.			File nr.	SPA36-FIRE-3E-EN.dwg

Note! This detail is only applicable when requirements for compartment walls are EI30 or less, and when vertical panels don't require additional support structures (see roof fastening details SPA33-FIRE-2E-EN and SPA35-FIRE-3E-EN). Otherwise, see external wall fastening details SPA36-FIRE-1E-EN or SPA36-FIRE-2E-EN.



- 001. Sandwich panel SPA, vertical installation
- 002. Sandwich panel SPA, SPA ENERGY or SPA LIFE
- 151. /EA1IC2/ Internal corner flashing
- 234. Flashing screw c/c 300 mm
- 302. /EA3SS410/ Sealing band/ Sealing strip
- 311. /EAWS5657850/ Mineral wool

Ruukki's delivery

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