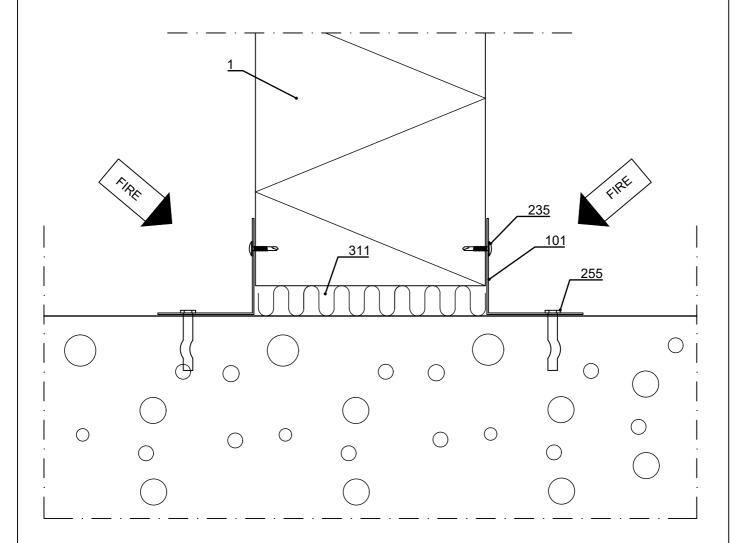
| Drawing nr. | Contents of drawing |
|----------------------|--|
| | |
| SPA30-FIRE-1E-EN | Fastening to floor, vertical or horizontal installation |
| SPA30-FIRE-2E-EN | Fastening to floor, vertical or horizontal installation |
| SPA31-FIRE-1E-EN | Vertical joint, horizontal installation |
| SPA31-FIRE-2E-EN | Vertical joint, horizontal installation |
| SPA31-FIRE-3E-EN | Vertical joint, horizontal installation |
| SPA31-FIRE-4E-EN | Vertical joint, horizontal installation, ≤El60 |
| SPA31-FIRE-5E-EN | Vertical joint, horizontal installation, ≤EI120 |
| SPASI-FIRE-SE-EN | Vertical joint, nonzontal installation, SET120 |
| SPA32-FIRE-1E-EN | L-corner without column, vertical installation, ≤ El30 |
| SPA32-FIRE-2E-EN | T-corner with column, horizontal (or vertical) installation |
| SPA32-FIRE-3E-EN | L-corner with column, horizontal or vertical installation |
| SPA32-FIRE-4E-EN | L-corner with column, vertical installation, ≤ El60 |
| SPA32-FIRE-5E-EN | L-corner without column, vertical installation, ≤ El60 |
| SPA32-FIRE-6E-EN | T-corner with column, vertical installation, ≤ El60 |
| SPA32-FIRE-7E-EN | T-corner without column, vertical installation, ≤ El60 |
| SPA32-FIRE-8E-EN | T-corner without column, vertical installation, ≤ El30 |
| SPA33-FIRE-1E-EN | Fastening to concrete roof, horizontal installation |
| SPA33-FIRE-2E-EN | Fastening to concrete roof, nonzontal installation |
| OI ASS-I IIVE-ZE-LIV | r asterning to concrete root, vertical installation |
| SPA35-FIRE-1E-EN | Fastening to load-bearing sheet roof, roof sheet perpendicular to compartment wall |
| SPA35-FIRE-2E-EN | Fastening to load-bearing sheet roof, roof sheet parallel to compartment wall |
| SPA35-FIRE-3E-EN | Fastening to load-bearing sheet roof, roof sheet parallel to compartment wall, alternative |
| | solution, El120 |
| SPA36-FIRE-1E-EN | Fastening to ext. wall, horizontal or vertical installation |
| SPA36-FIRE-2E-EN | Fastening to ext. wall, nonzontal of vertical installation. ≤ El60 |
| SPA36-FIRE-3E-EN | Fastening to ext. wall, vertical installation, ≤ El30 |
| SPA36-FIRE-4E-EN | Fastening to ext. wall, vertical installation, ≤ El60 |
| 3.7.30 1 11 12 12 11 | . actoring to one many foreign moralisation, - Eroo |
| | |

| City sector | Block | Site/Reg. nr. | File nr. | | | |
|--|---------------------|---------------|--------------|--|----------|-------|
| Building type | | | Drawing type | | | Nr. |
| Building, Name and address | | | | _{lwing} h panel SPA ment details, w | rall | Scale |
| LUUKKI | | | Principle | details | | |
| Ruukki Construction Oy Panuntie 11 00620 HELSINKI FINLAND | tel. +358 (0) 20 59 | 150 | | | | |
| Date 30.06.2023 | Designer | | Work nr. | Work nr. | Drw. nr. | Rev. |
| Drawn by Ruukki | Checked | | | | | |



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

| | Rev. date | Work nr. | Drawing nr. | |
|------------|-----------|----------|-------------------|--|
| 30.06.2023 | | | SPA30-FIRE-1E-EN | |
| | Rev. | | SPASU-FIRE-TE-EIN | |
| Ruukki | | | | |
| | Building | | File nr. | |
| 1.25 | | | | |

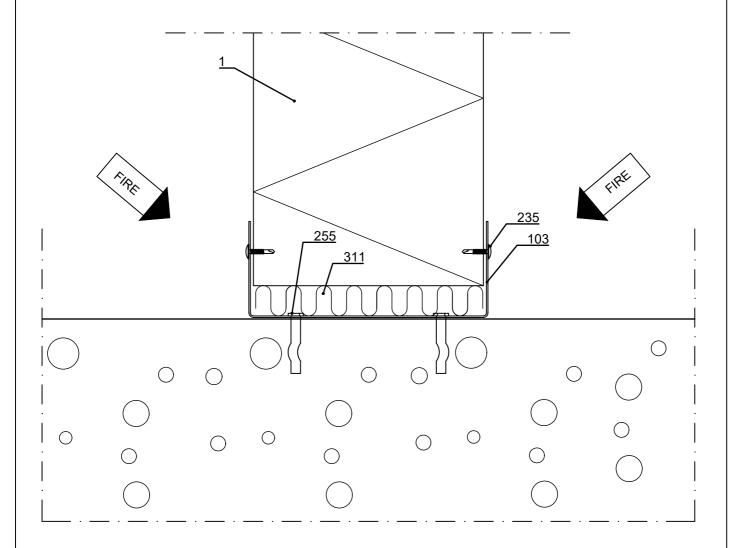


- ☐ 001. Sandwich panel SPA, vertical or horizontal installation
- □ 101. /EA1FC1/ Fastening corner flashing
- ☐ 235. Screw c/c 300 mm
- ☐ 255. Spike-fastener
- ☐ 311. /EAWS5657850/ Mineral wool
- ☑ Ruukki's delivery



Sandwich panel SPA compartment details Vertical or horizontal installation, fastening to floor, vertical section, alternative solution

| Date | Rev. date | Work nr. | Drawing nr. |
|------------|-----------|----------|------------------|
| 30.06.2023 | | | CDA20 FIDE OF EN |
| Drawn by | Rev. | | SPA30-FIRE-2E-EN |
| Ruukki | | | |
| Scale | Building | | File nr. |
| 1.2 5 | | | |



| \Box |)01. | Sandwich | ı panel | SPA, | vertica | l or | horizon | ta | linst | alla | tio | n |
|--------|------|----------|---------|------|---------|------|---------|----|-------|------|-----|---|
|--------|------|----------|---------|------|---------|------|---------|----|-------|------|-----|---|

☐ 103. Termo Purlin, U-profile

☐ 235. Screw c/c 300 mm

☐ 255. Spike-fastener

☐ 311. /EAWS5657850/ Mineral wool

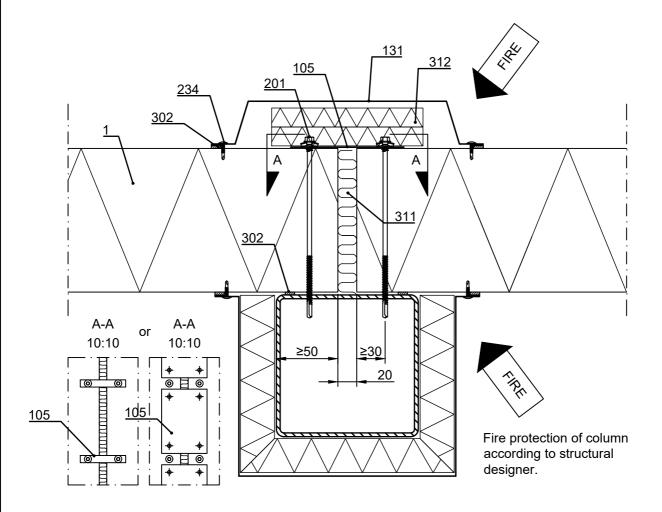
☑ Ruukki's delivery



Sandwich panel SPA compartment details Horizontal installation, vertical joint, horizontal section

| Date | Rev. date | Work nr. | Drawing nr. | |
|------------|-----------|----------|------------------|--|
| 30.06.2023 | | | SPA31-FIRE-1E-EN | |
| Drawn by | Rev. | | SPASI-FIRE-TE-EN | |
| Ruukki | | | | |
| Scale | Building | | File nr. | |
| 1:4 | _ | | | |

| Fire protection wool (e.g. FPS 17), mechanical fastening, thickness (mm) | | | | | |
|--|------|------|-------|-------|-------|
| Structure | El60 | El90 | El120 | EI180 | El240 |
| Wall | 0 | 20 | 20 | 30 | 50 |



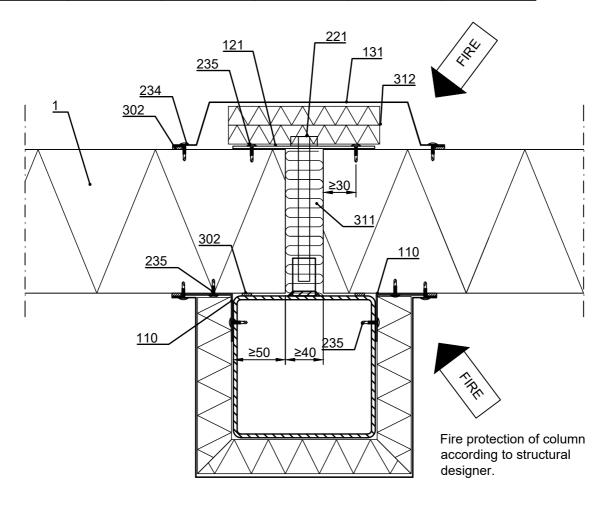
- □ 001. Sandwich panel SPA, horizontal installation
- □ 105. Steel bandings or steel sheets, t ≥ 0,7 mm
- ☐ 131. /EA1R18/ or other Cover flashing
- ☐ 201. Self-drilling panel screw, washer with sealing
- ☐ 234. Flashing screw c/c 300 mm
- ☐ 302. /EA3SS410/ Sealing band
- ☐ 311. /EAWS5657850/ Mineral wool
- □ 312. /EAFW206001200/ Fire protection wool, mechanical fastening to surface
- ☑ Ruukki's delivery



Sandwich panel SPA compartment details Horizontal installation, vertical joint, horizontal section

| Date | Rev. date | Work nr. | Drawing nr. | |
|------------|-----------|----------|-------------------|--|
| 30.06.2023 | | | SPA31-FIRE-2E-EN | |
| | Rev. | | SPASI-FIRE-ZE-EIN | |
| Ruukki | | | | |
| Scale | Building | | File nr. | |
| 1:4 | | | | |

| Fire protection wool (e.g. FPS 17), mechanical fastening, thickness (mm) | | | | | |
|--|------|------|-------|-------|-------|
| Structure | El60 | El90 | El120 | EI180 | El240 |
| Wall | 0 | 20 | 20 | 30 | 50 |



- □ 001. Sandwich panel SPA, horizontal installation
- □ 110. L-purlin, 50x50 or 60x60, $t \ge 1,2$ mm
- ☐ 121. /EA6FP___/ Fastening plate
- ☐ 131. /EA1R18/ or other Cover flashing
- ☐ 221. Internal thread socket + hex bolt
- ☐ 234. Flashing screw c/c 300 mm

- ☐ 235. Screw (according to structural designer)
- ☐ 302. /EA3SS410/ Sealing band
- ☐ 311. /EAWS5657850/ Mineral wool
- □ 312. /EAFW206001200/ Fire protection wool, mechanical fastening to surface

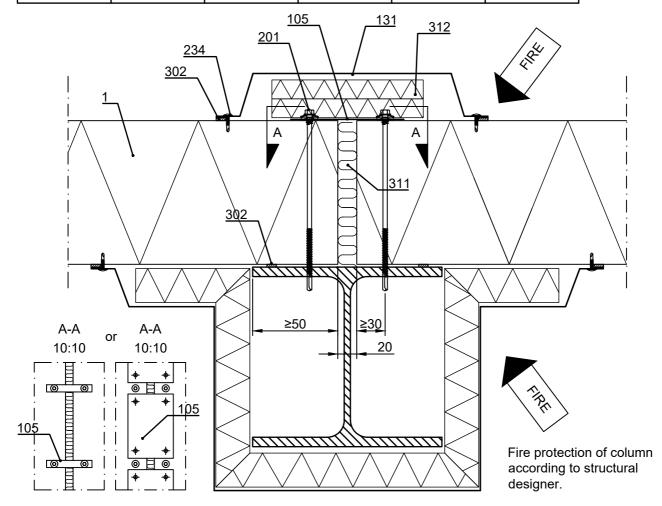
☑ Ruukki's delivery



Sandwich panel SPA compartment details Horizontal installation, vertical joint, horizontal section

| | Date | Rev. date | Work nr. | Drawing nr. |
|--|------------|-----------|----------|------------------|
| | 30.06.2023 | | | CDA24 FIDE 2E EN |
| | Drawn by | Rev. |] | SPA31-FIRE-3E-EN |
| | Ruukki | | | |
| | | Building | | File nr. |
| | 1:4 | | | |

| Fire protection wool (e.g. FPS 17), mechanical fastening, thickness (mm) | | | | | |
|--|------|------|-------|-------|-------|
| Structure | El60 | EI90 | El120 | EI180 | El240 |
| Wall | 0 | 20 | 20 | 30 | 50 |



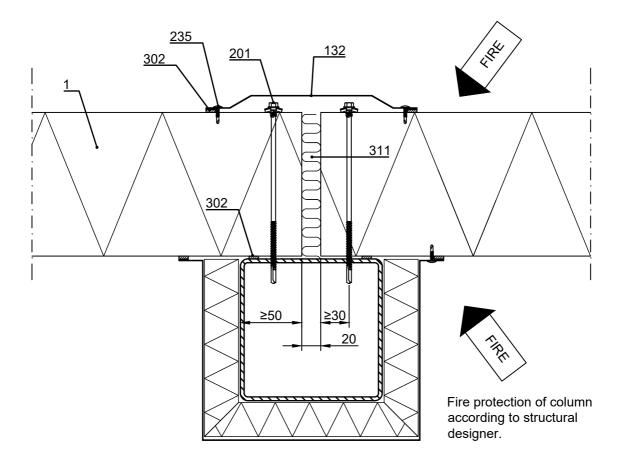
- □ 001. Sandwich panel SPA, horizontal installation
- □ 105. Steel bandings or steel sheets, t ≥ 0,7 mm
- ☐ 131. /EA1R18/ or other Cover flashing
- ☐ 201. Self-drilling panel screw, washer with sealing
- ☐ 234. Flashing screw c/c 300 mm
- ☐ 302. /EA3SS410/ Sealing band
- ☐ 311. /EAWS5657850/ Mineral wool
- ☐ 312. /EAFW206001200/ Fire protection wool, mechanical fastening to surface
- ☑ Ruukki's delivery



Sandwich panel SPA compartment details Horizontal installation, vertical joint ≤ El60, horizontal section

| | Rev. date | Work nr. | Drawing nr. |
|------------|-----------|----------|------------------|
| 30.06.2023 | | | CDA24 FIDE 4F FN |
| | Rev. | | SPA31-FIRE-4E-EN |
| Ruukki | | | |
| Scale | Building | | File nr. |
| 1:4 | | | |

Note! This detail is only applicable when requirements for compartment walls are El60 or less. For El90 - El120 walls see SPA31-FIRE-5E-EN. Otherwise, see universally applicable solutions SPA31-FIRE-1E-EN, SPA31-FIRE-2E-EN or SPA31-FIRE-3E-EN.



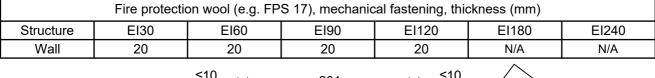
- □ 001. Sandwich panel SPA, horizontal installation
- ☐ 132. /EA1JF60-1/ or /EA1JF60-2/ Fire flashing
- ☐ 201. Self-drilling panel screw, washer with sealing
- ☐ 235. Flashing screw c/c 300 mm
- ☐ 302. /EA3SS410/ Sealing band
- ☐ 311. /EAWS5657850/ Mineral wool
- ☑ Ruukki's delivery

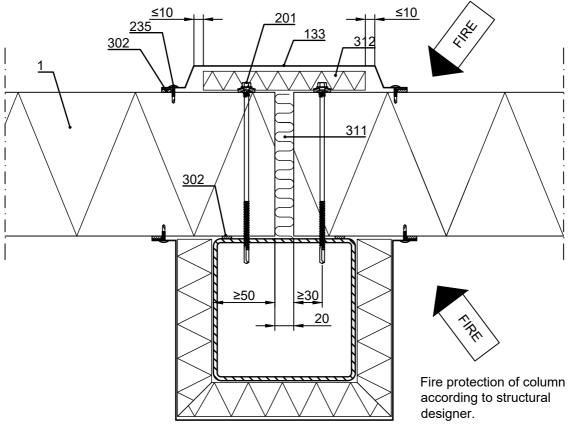


Sandwich panel SPA compartment details Horizontal installation, vertical section ≤ El120, horizontal section

| Date | Rev. date | Work nr. | Drawing nr. |
|------------|-----------|----------|-------------------|
| 30.06.2023 | | | SPA31-FIRE-5E-EN |
| Drawn by | Rev. | | SPASI-FIRE-SE-EIN |
| Ruukki | | | |
| Scale | Building | | File nr. |
| 1:4 | | | |

Note! This detail is only applicable when requirements for compartment walls are El120 or less. For ≤El60 walls see SPA31-FIRE-4E-EN. Otherwise, see universally applicable solutions SPA31-FIRE-1E-EN, SPA31-FIRE-2E-EN or SPA31-FIRE-3E-EN.





- ☐ 001. Sandwich panel SPA, horizontal installation
- ☐ 133. /EA1JV1/ or /EA1JV2/ Vertical joint flashing
- ☐ 201. Self-drilling panel screw, washer with sealing
- ☐ 235. Flashing screw c/c 300 mm
- ☐ 302. /EA3SS410/ Sealing band
- ☐ 311. /EAWS5657850/ Mineral wool
- □ 312. /EAFW206001200/ Fire protection wool, mechanical fastening to surface

20 mm fire protection wool is always mandatory with this joint type to better facilitate the load transfer between outer panel sheets during fire.

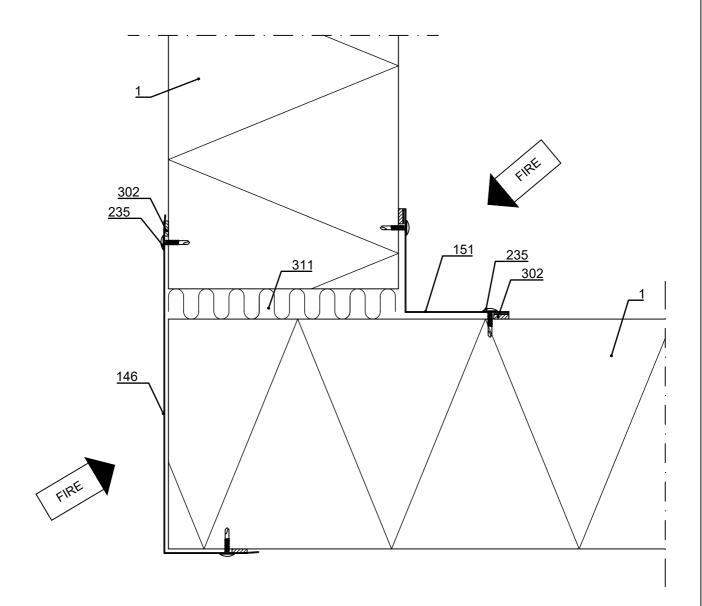
☑ Ruukki's delivery



Sandwich panel SPA compartment details Vertical installation, L-corner without column, ≤ El30, horizontal section

| Date | Rev. date | Work nr. | Drawing nr. | |
|---------------------|-----------|----------|------------------|--|
| 30.06.2023 | | | SDA22 FIDE 4F EN | |
| Drawn by | Rev. | | SPA32-FIRE-1E-EN | |
| [*] Ruukki | | | | |
| Scale | Building | | File nr. | |
| 1:2.5 | | | | |

Note! This detail is only applicable when requirements for compartment walls are El30 or less, and when vertical panels don't require additional support structures (see roof fastening detail SPA33-FIRE-2E-EN).



- ☐ 001. Sandwich panel SPA, vertical installation
- ☐ 146. /EA1EC9-___/ External corner flashing
- ☐ 151. /EA1IC2/ Internal corner flashing
- ☐ 235. Screw c/c 300 mm
- ☐ 302. /EA3SS410/ Sealing band
- ☐ 311. /EAWS5657850/ Mineral wool
- ☑ Ruukki's delivery

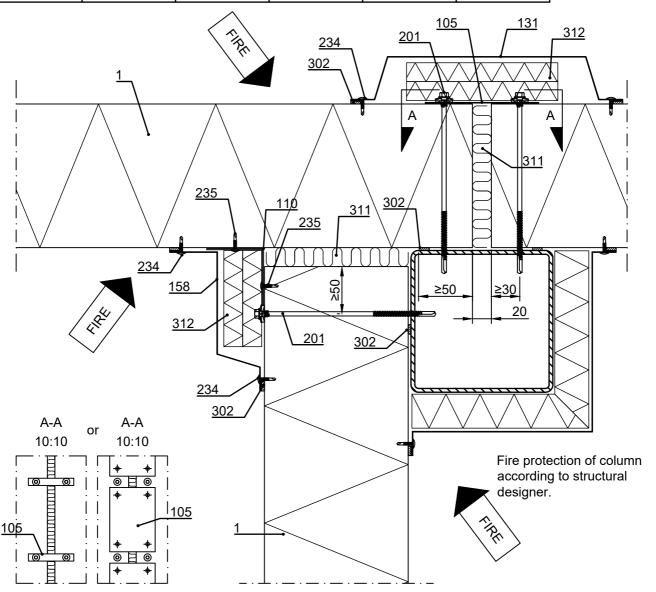
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Contents of drawing

Sandwich panel SPA compartment details Horizontal (or vertical) installation, T-corner with column, horizontal section

| Date | Rev. date | Work nr. | Drawing nr. |
|---------------------|-----------|----------|-------------------|
| 30.06.2023 | | | SPA32-FIRE-2E-EN |
| | Rev. | | SPA32-FIRE-ZE-EIN |
| [°] Ruukki | | | |
| Scale | Building | | File nr. |
| 1:4 | | | |

| Fire protection wool (e.g. FPS 17), mechanical fastening, thickness (mm) | | | | | |
|--|------|------|-------|-------|-------|
| Structure | El60 | EI90 | El120 | EI180 | El240 |
| Wall | 0 | 20 | 20 | 30 | 50 |



- $\hfill \square$ 001. Sandwich panel SPA, horizontal installation
- □ 105. Steel bandings or steel sheets, t ≥ 0,7 mm, required in horizontal installation only
- 110. L-purlin, 50x50 or 60x60, t ≥ 1,2 mm, required in horizontal installation only
- □ 131. /EA1R18/ or other Cover flashing
- ☐ 158. /EA1R23/ Cover flashing

- ☐ 201. Self-drilling panel screw, washer with sealing
- ☐ 234. Flashing screw c/c 300 mm
- ☐ 235. Screw c/c 300 mm
- ☐ 302. /EA3SS410/ Sealing band
- ☐ 311. /EAWS5657850/ Mineral wool
- □ 312. /EAFW206001200/ Fire protection wool, mechanical fastening to surface

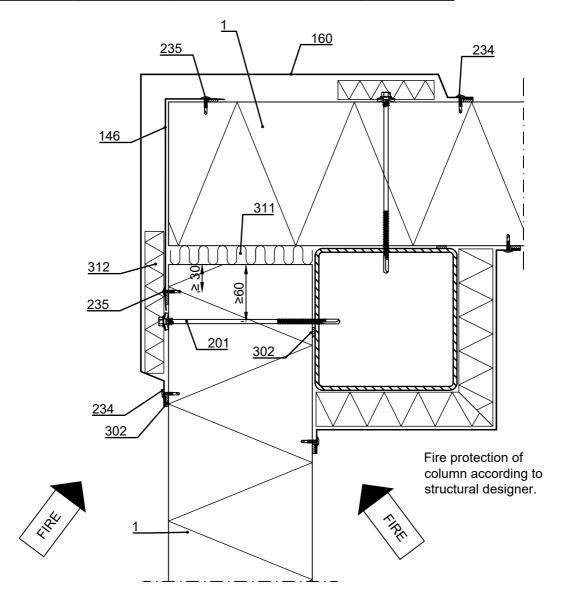
☑ Ruukki's delivery



Sandwich panel SPA compartment details Horizontal (or vertical) installation L-corner with column, horizontal section

| Date | Rev. date | Work nr. | Drawing nr. |
|------------|-----------|----------|------------------|
| 30.06.2023 | | | SPA32-FIRE-3E-EN |
| Drawn by | Rev. | | SPA32-FIRE-SE-EN |
| Ruukki | | | |
| Scale | Building | • | File nr. |
| 1:4 | | | |

| Fire protection wool (e.g. FPS 17), mechanical fastening, thickness (mm) | | | | | |
|--|------|------|-------|-------|-------|
| Structure | EI60 | El90 | El120 | EI180 | El240 |
| Wall | 0 | 20 | 20 | 30 | 50 |



- □ 001. Sandwich panel SPA, horizontal or vertical inst.
 □ 234. Flashing screw c/c 300 mm
 □ 146. /EA1EC9-__/ External corner flashing
 □ 235. Screw c/c 300 mm
 □ 160. /EA1EC4/ External corner flashing (if panel thickness
 □ 302. /EA3SS410/ Sealing band
 > 200 mm, or fire protection wool > 20 mm, flashing must
 □ 311. /EAWS5657850/ Mineral wool
 be designed according to dimensions)
 □ 312. /EAFW206001200/ Fire protection wool,
- ☐ 201. Self-drilling panel screw, washer with sealing mechanical fastening to surface

☑ Ruukki's delivery

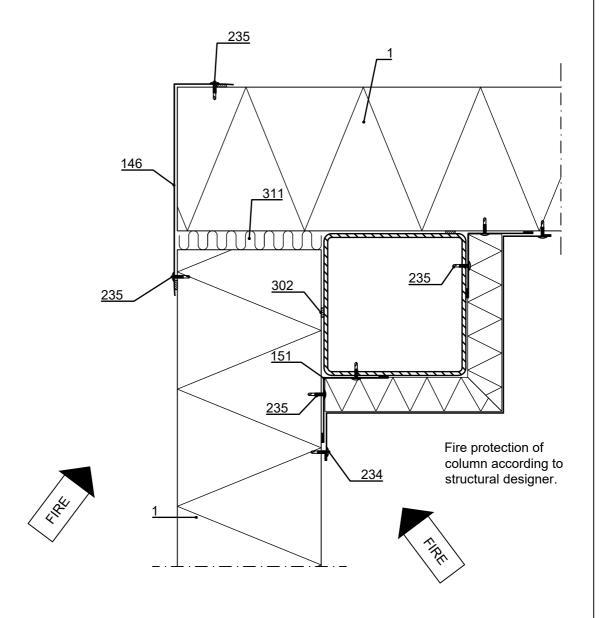


Sandwich panel SPA compartment details Vertical installation,

L-corner with column, ≤ El60, horizontal section

| Date | Rev. date | Work nr. | Drawing nr. | |
|------------|-----------|----------|------------------|--|
| 30.06.2023 | | | SDA22 FIDE 4F FN | |
| | Rev. | | SPA32-FIRE-4E-EN | |
| Ruukki | | | | |
| Scale | Building | | File nr. | |
| 1:4 | | | | |

Note! This detail is only applicable when requirements for compartment walls are El60 or less. Otherwise, see SPA32-FIRE-3E-EN.



- ☐ 001. Sandwich panel SPA, vertical installation
- ☐ 146. /EA1EC9-___/ External corner flashing
- ☐ 151. /EA1IC2/ Internal corner flashing
- ☐ 302. /EA3SS410/ Sealing band
- ☑ Ruukki's delivery

- ☐ 234. Flashing screw c/c 300 mm
- ☐ 235. Screw c/c 300 mm
- ☐ 311. /EAWS5657850/ Mineral wool

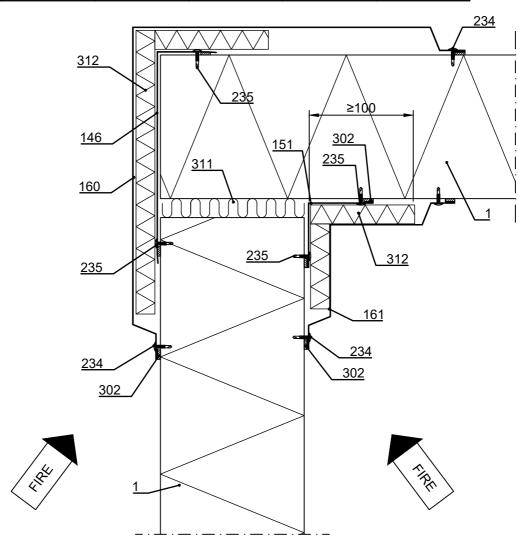


Sandwich panel SPA compartment details Vertical installation, L-corner without column, ≤ El60, horizontal section

| Date | Rev. date | Work nr. | Drawing nr. |
|------------|-----------|----------|-------------------|
| 30.06.2023 | | | SPA32-FIRE-5E-EN |
| | Rev. | | SPA32-FIRE-DE-EIN |
| Ruukki | | | |
| Scale | Building | | File nr. |
| 1:4 | | | |

Note! This detail is only applicable when requirements for compartment walls are El60 or less, and when vertical panels don't require additional support structures (see roof fastening detail SPA33-FIRE-2E-EN).

| Fire protection wool (e.g. FPS 17), mechanical fastening, thickness (mm) | | | | | mm) |
|--|------|------|-------|-------|-------|
| Structure | El60 | El90 | El120 | EI180 | El240 |
| Wall | 20 | N/A | N/A | N/A | N/A |



- □ 001. Sandwich panel SPA, horizontal or vertical inst.
- ☐ 146. /EA1EC9-___ / External corner flashing
- ☐ 151. /EA1IC2/ Internal corner flashing
- ☐ 160. /EA1EC4/ External corner flashing
- ☐ 161. /EA1IC3/ Internal corner flashing
- ☐ 234. Flashing screw c/c 300 mm

- ☐ 235. 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

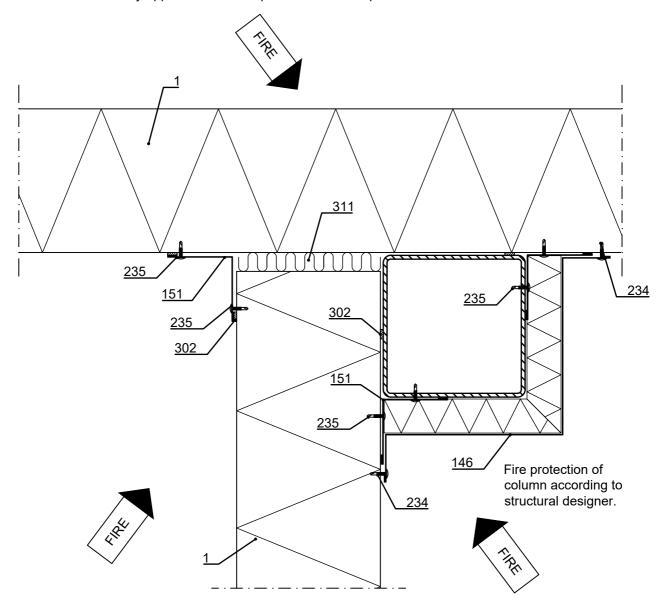


Sandwich panel SPA compartment details Vertical installation,

T-corner with column, ≤ El60, horizontal section

| Date 20.00 2022 | Rev. date | Work nr. | Drawing nr. | |
|---------------------|-----------|----------|------------------|--|
| 30.06.2023 | | | CDA22 FIDE GE EN | |
| Drawn by | Rev. | | SPA32-FIRE-6E-EN | |
| [°] Ruukki | | | | |
| Scale | Building | | File nr. | |
| 1:4 | Ĭ | | | |

Note! This detail is only applicable when requirements for compartment walls are El60 or less.



- □ 001. Sandwich panel SPA, vertical installation
- ☐ 146. /EA1EC9-___/ External corner flashing
- ☐ 151. /EA1IC2/ Internal corner flashing
- ☐ 302. /EA3SS410/ Sealing band
- ☑ Ruukki's delivery

- ☐ 234. Flashing screw c/c 300 mm
- ☐ 235. Screw c/c 300 mm
- ☐ 311. /EAWS5657850/ Mineral wool

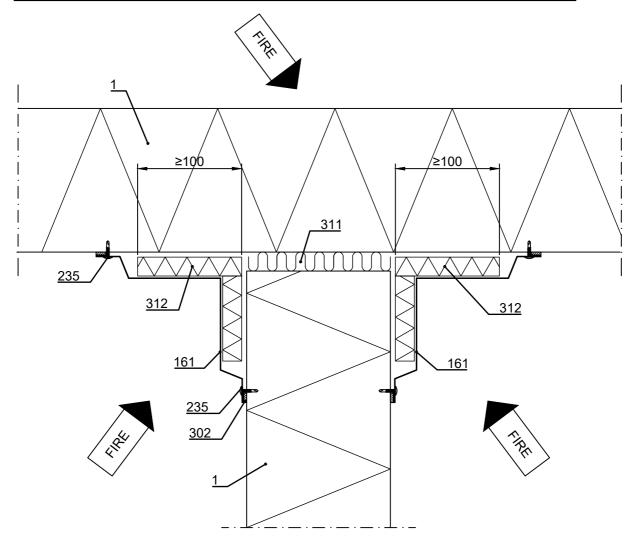


Sandwich panel SPA compartment details Vertical installation, T-corner without column, ≤ El60, horizontal section

| Date | Rev. date | Work nr. | Drawing nr. |
|------------|-----------|----------|------------------|
| 30.06.2023 | | | SPA32-FIRE-7E-EN |
| Drawn by | Rev. | | SPA32-FIRE-/E-EN |
| Ruukki | | | |
| | Building | | File nr. |
| 1:4 | | | |

Note! This detail is only applicable when requirements for compartment walls are El60 or less, and when vertical panels don't require additional support structures (see roof fastening detail SPA33-FIRE-2E-EN).

| Fire protection wool (e.g. FPS 17), mechanical fastening, thickness (mm) | | | | | mm) |
|--|------|------|-------|-------|-------|
| Structure | El60 | EI90 | El120 | EI180 | El240 |
| Wall | 20 | N/A | N/A | N/A | N/A |



- □ 001. Sandwich panel SPA, vertical installation □ 235. Screw c/c 300 mm
- ☐ 151. /EA1IC2/ Internal corner flashing
- ☐ 161. /EA1IC3/ Internal corner flashing
- ☐ 234. Flashing screw c/c 300 mm

- ☐ 302. /EA3SS410/ Sealing band
- ☐ 311. /EAWS5657850/ Mineral wool

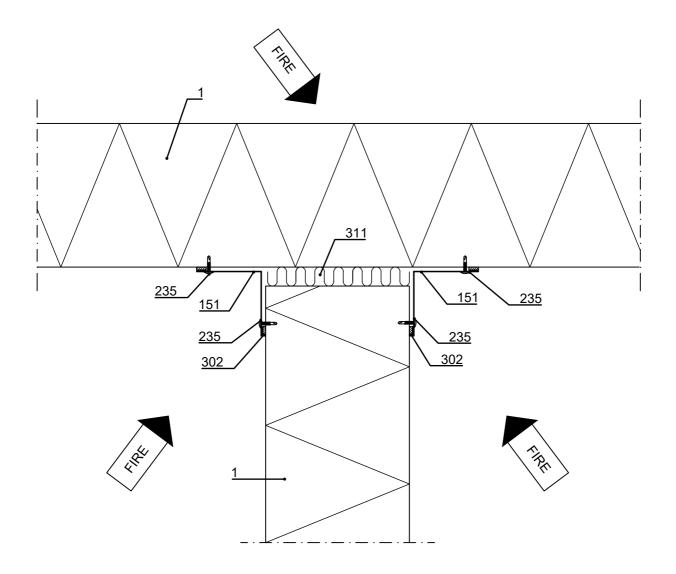
☑ Ruukki's delivery



Sandwich panel SPA compartment details Vertical installation, T-corner without column, ≤ El30, horizontal section

| Date | Rev. date | Work nr. | Drawing nr. |
|------------|-----------|----------|------------------|
| 30.06.2023 | | | CDA22 FIDE OF EN |
| | Rev. | | SPA32-FIRE-8E-EN |
| Ruukki | | | |
| Scale | Building | | File nr. |
| 1:4 | | | |

Note! This detail is only applicable when requirements for compartment walls are El30 or less, and when vertical panels don't require additional support structures (see roof fastening detail SPA33-FIRE-2E-EN).



- □ 001. Sandwich panel SPA, vertical installation
- ☐ 151. /EA1IC2/ Internal corner flashing
- ☐ 234. Screw c/c 300 mm
- ☐ 302. /EA3SS410/ Sealing band
- ☐ 311. /EAWS5657850/ Mineral wool
- ☑ Ruukki's delivery

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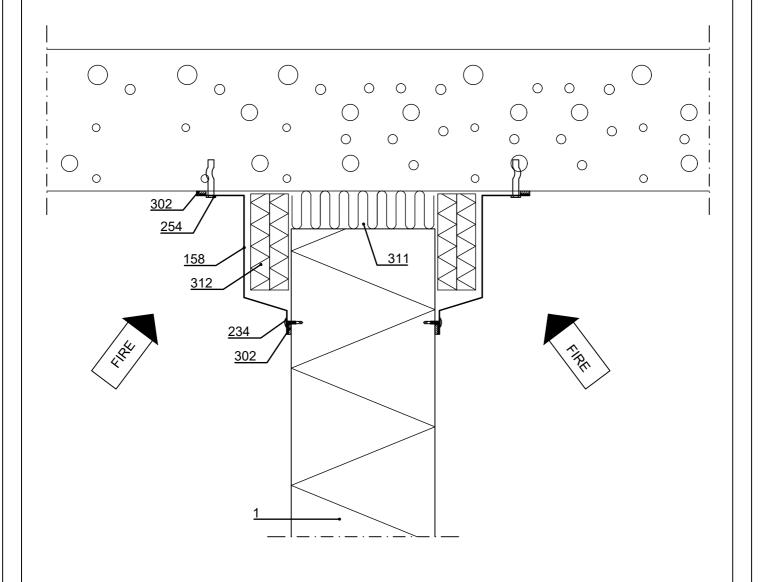
Contents of drawing

Sandwich panel SPA compartment details Horizontal installation,

fastening to concrete roof, vertical section

| Date | Rev. date | Work nr. | Drawing nr. |
|------------|-----------|----------|------------------|
| 30.06.2023 | | | CDA22 FIDE 4F EN |
| | Rev. | | SPA33-FIRE-1E-EN |
| Ruukki | | | |
| Scale | Building | | File nr. |
| 1:4 | | | |

| Fire protection wool (e.g. FPS 17), mechanical fastening, thickness (mm) | | | | | |
|--|------|------|-------|-------|-------|
| Structure | EI60 | El90 | El120 | EI180 | El240 |
| Wall | 0 | 20 | 20 | 30 | 50 |



- □ 001. Sandwich panel SPA, horizontal installation
- ☐ 158. /EA1R23/ Cover flashing
- ☐ 234. Flashing screw c/c 300 mm
- ☐ 254. Spike-fastener

- ☐ 302. /EA3SS410/ Sealing band
- ☐ 311. /EAWS5657850/ Mineral wool
- ☐ 312. /EAFW206001200/ Fire protection wool, mechanical fastening to surface

☑ Ruukki's delivery

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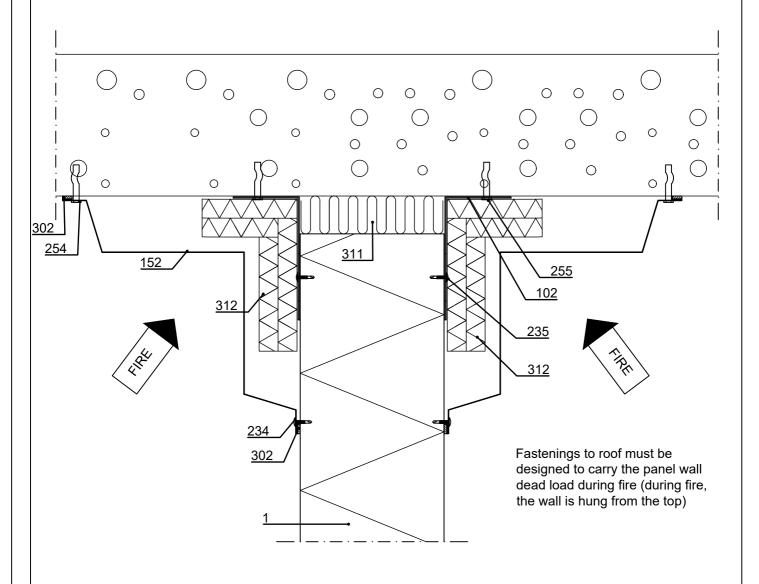
Contents of drawing

Sandwich panel SPA compartment details Vertical installation,

fastening to concrete roof, vertical section

| Date | Rev. date | Work nr. | Drawing nr. |
|------------|-----------|----------|------------------|
| 30.06.2023 | | | CDA22 FIDE 2F FN |
| Drawn by | Rev. | | SPA33-FIRE-2E-EN |
| Ruukki | | | |
| Scale | Building | | File nr. |
| 1:4 | | | |

| Fire protection wool (e.g. FPS 17), mechanical fastening, thickness (mm) | | | | | |
|--|------|------|-------|-------|-------|
| Structure | EI60 | EI90 | El120 | EI180 | El240 |
| Wall | 0 | 20 | 20 | 30 | 50 |



- □ 001. Sandwich panel SPA, horizontal installation
- □ 102. /EA1FC5/ L-corner
- □ 152. /EA1R21/ Roof flashing
- ☐ 234. Flashing screw c/c 300 mm
- ☐ 235. Screw (according to structural designer)
- ☐ 254. Spike-fastener
- ☑ Ruukki's delivery

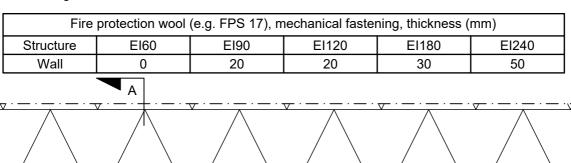
- ☐ 255. Spike-fastener (according to structural designer)
 - ☐ 302. /EA3SS410/ Sealing band
- ☐ 311. /EAWS5657850/ Mineral wool
- ☐ 312. /EAFW206001200/ Fire protection wool, mechanical fastening to surface

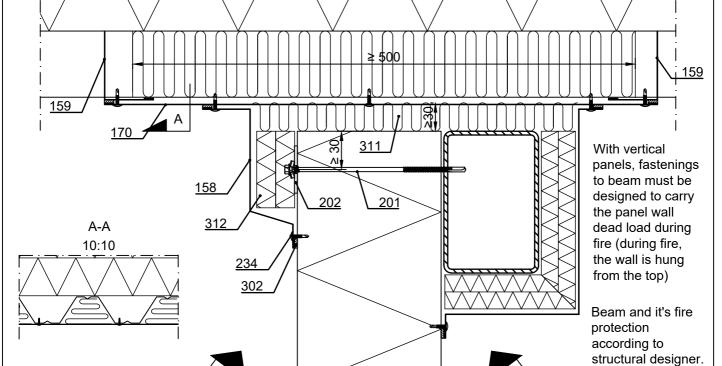


Sandwich panel SPA compartment details Horizontal or vertical installation, fastening to load-bearing sheet (span perpendicular)

| Date | Rev. date | Work nr. | Drawing nr. |
|------------|-----------|----------|------------------|
| 30.06.2023 | | | SPA35-FIRE-1E-EN |
| Drawn by | Rev. | | SPASS-FIRE-TE-EN |
| Ruukki | | | |
| Scale | Building | | File nr. |
| 1:4 | | | |

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 (El30-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.





- □ 001. Sandwich panel SPA, horizontal or vertical inst.
- ☐ 158. /EA1R23/ Cover flashing
- ☐ 159. /EA1CFT LB/ Closure flashing, bent
- □ 170. Flat steel sheet
- ☐ 201. Self-drilling panel screw, washer with sealing
- □ 202. Large washer, 50x50 mm, t ≥ 2 mm, required for vertical panel installations only
- ☐ 234. Flashing screw c/c 300 mm
- ☐ 302. /EA3SS410/ Sealing band
- □ 311. /EAWS5657850/ Mineral wool
- ☐ 312. /EAFW206001200/ Fire protection wool, mechanical fastening to surface

Designed to carry the roof loads during fire.

☑ Ruukki's delivery

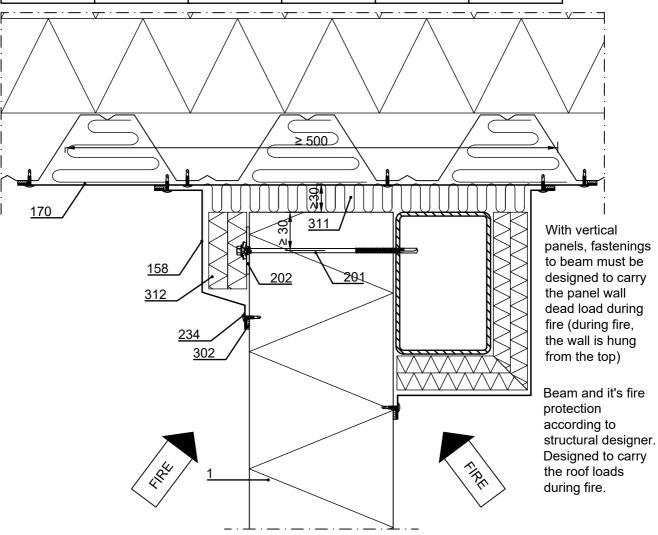


Sandwich panel SPA compartment details Horizontal or vertical installation, fastening to load-bearing sheet (span parallel)

| Date | Rev. date | Work nr. | Drawing nr. |
|------------|-----------|----------|-------------------|
| 30.06.2023 | | | SPA35-FIRE-2E-EN |
| | Rev. | | SPASS-FIRE-ZE-EIN |
| Ruukki | | | |
| Scale | Building | | File nr. |
| 1:4 | _ | | |

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 (El30-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 (e.g. FPS 17), mechanical fastening, thickness (mm) | | | | | |
|--|------|------|-------|-------|-------|
| Structure | EI60 | El90 | El120 | El180 | El240 |
| Wall | 0 | 20 | 20 | 30 | 50 |



- □ 001. Sandwich panel SPA, horizontal or vertical inst.
- □ 158. /EA1R23/ Cover flashing
- ☐ 170. Flat steel sheet
- ☐ 201. Self-drilling panel screw, washer with sealing
- 202. Large washer, 50x50 mm, t ≥ 2 mm, required for vertical panel installations only
- ☐ 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

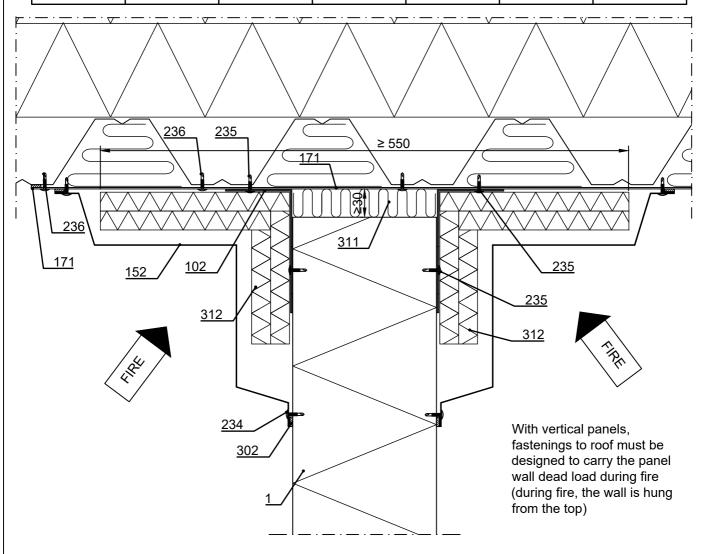


Sandwich panel SPA compartment details Horizontal or vertical installation, fastening to load-bearing sheet (span parallel), ≤ EI120

| Date | Rev. date | Work nr. | Drawing nr. |
|------------|-----------|----------|-------------------|
| 30.06.2023 | | | SPA35-FIRE-3E-EN |
| | Rev. | | SPA30-FIRE-SE-EIN |
| Ruukki | | | |
| | Building | | File nr. |
| 1:4 | | | |

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, and when requirements for compartment walls are El120 or less. Otherwise, see SPA35-FIRE-1E-EN and SPA35-FIRE-2E-EN.

| I | Fire protection wool (e.g. FPS 17), mechanical fastening, thickness (mm) | | | | | | |
|---|--|---|----|----|-------|-------|-----|
| Structure El30 El60 El90 El120 El180 | | | | | EI180 | El240 | |
| I | Wall | 0 | 0 | 20 | 20 | 30 | 50 |
| I | Roof | 0 | 20 | 30 | 50 | n/a | n/a |



- □ 001. Sandwich panel SPA, horizontal or vertical inst.
- ☐ 102. /EA1FC5/ L-corner
- □ 152. /EA1R21/ Roof flashing
- ☐ 171. Flat steel sheet, t = 0.7 2.5 mm
- ☐ 234. Flashing screw c/c 300 mm
- ☐ 235. Screw (according to structural designer)
- ☑ Ruukki's delivery

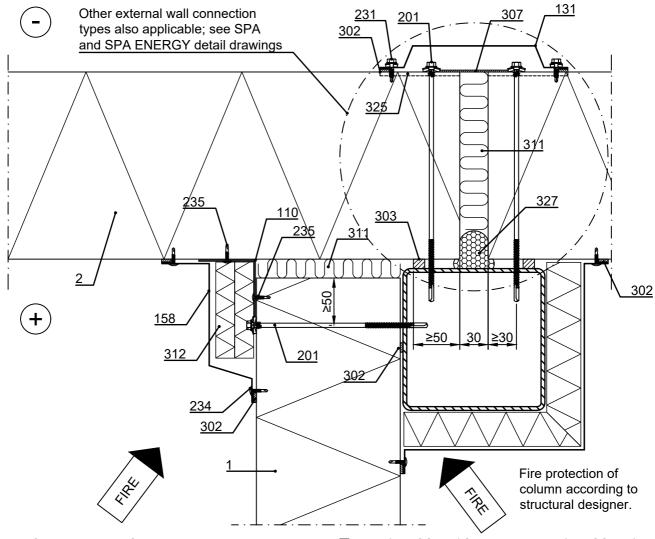
- ☐ 236. Screw (according to structural designer)
- ☐ 302. /EA3SS410/ Sealing band
- □ 311. /EAWS5657850/ Mineral wool mechanical fastening to surface
- □ 312. /EAFW206001200/ Fire protection wool,



Sandwich panel SPA compartment details Horizontal (or vertical) installation, fastening to external wall, horizontal section

| Date | Rev. date | Work nr. | Drawing nr. |
|------------|-----------|----------|------------------|
| 30.06.2023 | | | SPA36-FIRE-1E-EN |
| | Rev. | | SPASO-FIRE-TE-EN |
| Ruukki | | | |
| Scale | Building | | File nr. |
| 1:4 | _ | | |

| Fire protection wool (e.g. FPS 17), mechanical fastening, thickness (mm) | | | | | |
|--|------|------|-------|-------|-------|
| Structure | EI60 | El90 | El120 | EI180 | El240 |
| Wall | 0 | 20 | 20 | 30 | 50 |



- □ 001. Sandwich panel SPA, horizontal or vertical inst.
- □ 002. Sandwich panel SPA, SPA ENERGY or SPA E LIFE, horizontal installation
- □ 110. L-purlin, 50x50 or 60x60, $t \ge 1,2$ mm
- ☐ 131. /EA1JV1/ Vertical joint flashing
- ☐ 158. /EA1R23/ Cover flashing
- ☐ 201. Self-drilling panel screw, washer with sealing
- ☐ 231. Flashing fastener, washer with sealing
- ☐ 234. Flashing screw c/c 300 mm
- ☐ 235. 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. /EA3JS7525/ Joint sealing
- ☐ 311. /EAWS5657850/ Mineral wool
- ☐ 312. /EAFW206001200/ Fire protection wool, mechanical fastening to surface
- ☐ 325. Ruukki silicone during installation to outer female groove in length equivalent to vertical joint flashing width
- ☐ 327. Elastic polyurethane foam

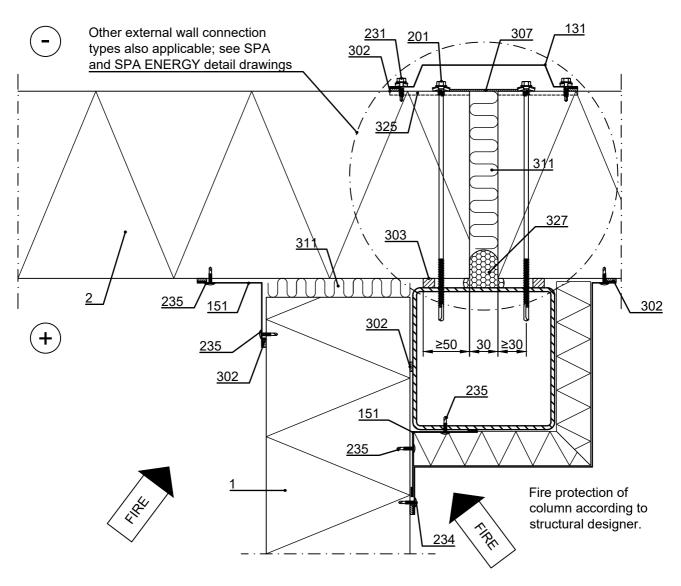
☑ Ruukki's delivery



Sandwich panel SPA compartment details Vertical installation, fastening to external wall, ≤ El60, horizontal section

| Date | Rev. date | Work nr. | Drawing nr. | |
|---------------------|-----------|----------|------------------|--|
| 30.06.2023 | | | CDASS FIDE SE EN | |
| | Rev. | | SPA36-FIRE-2E-EN | |
| [*] Ruukki | | | | |
| Scale | Building | | File nr. | |
| 1:4 | | | | |

Note! This detail is only applicable when requirements for compartment walls are El60 or less. Otherwise, see SPA36-FIRE-1E-EN.



- □ 001. Sandwich panel SPA, vertical installation
- □ 002. Sandwich panel SPA, SPA ENERGY or
- SPA E 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
- ☐ 235. 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. /EA3JS7525/ Joint sealing
- ☐ 311. /EAWS5657850/ Mineral wool
- ☐ 325. Ruukki silicone during installation to outer female groove in length equivalent to vertical joint flashing width
- ☐ 327. Elastic polyurethane foam

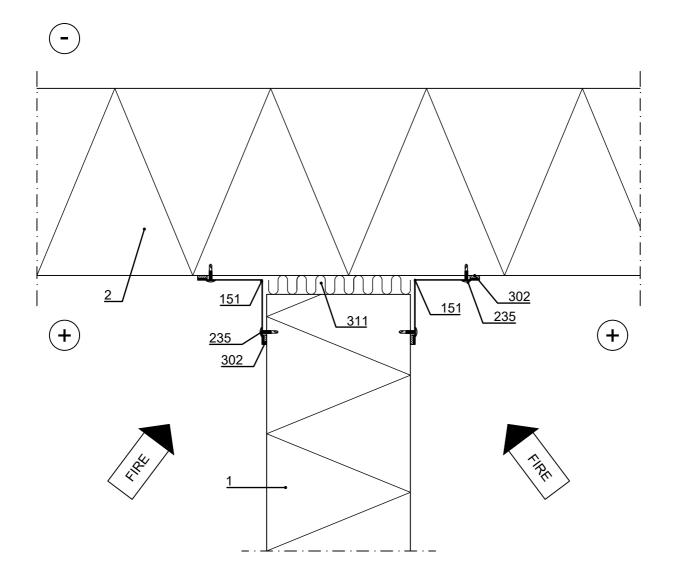
☑ Ruukki's delivery



Sandwich panel SPA compartment details Vertical installation, fastening to external wall, ≤ El30, horizontal section

| Date | Rev. date | Work nr. | Drawing nr. | |
|------------|-----------|----------|-------------------|--|
| 30.06.2023 | | | SPA36-FIRE-3E-EN | |
| | Rev. | | SPASO-FIRE-SE-EIN | |
| Ruukki | | | | |
| Scale | Building | | File nr. | |
| 1:4 | | | | |

Note! This detail is only applicable when requirements for compartment walls are El30 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. If requirement is El60 or less, see SPA36-FIRE-4E-EN.



- □ 001. Sandwich panel SPA, vertical installation
- □ 002. Sandwich panel SPA, SPA ENERGY or SPA E LIFE
- ☐ 151. /EA1IC2/ Internal corner flashing
- ☐ 235. Screw c/c 300 mm
- ☐ 302. /EA3SS410/ Sealing band
- ☐ 311. /EAWS5657850/ Mineral wool

☑ Ruukki's delivery

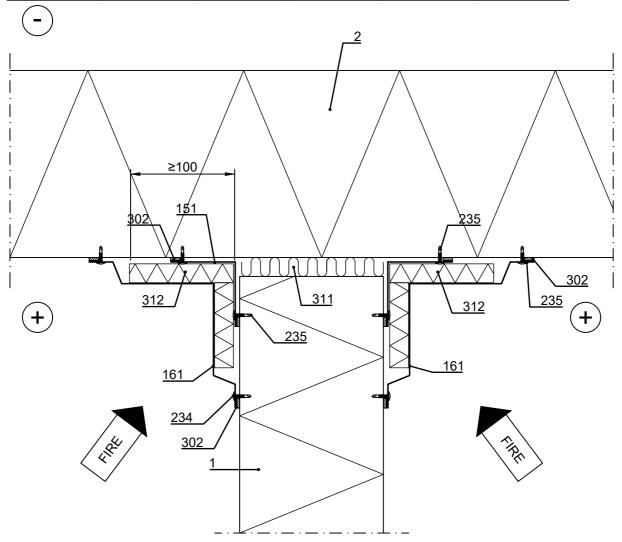


Sandwich panel SPA compartment details Vertical installation, fastening to external wall, ≤ El60, horizontal section

| Date | Rev. date | Work nr. | Drawing nr. | |
|------------|-----------|----------|------------------|--|
| 30.06.2023 | | | SPA36-FIRE-4E-EN | |
| | Rev. | | SPA30-FIRE-4E-EN | |
| Ruukki | | | | |
| Scale | Building | | File nr. | |
| 1:4 | | | | |

Note! This detail is only applicable when requirements for compartment walls are El60 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. If requirement is El30 or less, see SPA36-FIRE-3E-EN.

| Fire protection wool (e.g. FPS 17), mechanical fastening, thickness (mm) | | | | | |
|--|------|------|-------|-------|-------|
| Structure | El60 | EI90 | EI120 | EI180 | El240 |
| Wall | 20 | N/A | N/A | N/A | N/A |



- □ 001. Sandwich panel SPA, vertical installation
- □ 002. Sandwich panel SPA, SPA ENERGY or SPA E LIFE
- ☐ 151. /EA1IC2/ Internal corner flashing
- ☐ 161. /EA1IC3/ Internal corner flashing
- ☐ 234. Flashing screw c/c 300 mm
- ☐ 235. Screw c/c 300 mm
- ☐ 302. /EA3SS410/ Sealing band
- ☐ 311. /EAWS5657850/ Mineral wool

☑ Ruukki's delivery