

# BORDER

## ALUMINIUM PERMANENT AND TEMPORARY RAILINGS

### SIMPLE

Featuring easy and fast assembly, it can be installed in just a few steps thanks to the innovative snap-fit system.

### COMPATIBLE

The modular system can meet any design requirement thanks to the wide range of available accessories.

### AESTHETICS AND DURABILITY

Made of aluminium alloy, the railing guarantees a good corrosion resistance and a pleasing appearance.

|                        |                              |                                 |                        |                 |                         |                  |
|------------------------|------------------------------|---------------------------------|------------------------|-----------------|-------------------------|------------------|
| EN<br>14122-3:<br>2016 | EN<br>13374+A1:<br>2024<br>A | NTC<br>2016<br>+<br>D.Lgs 81/08 | NF<br>E85-015:<br>2019 | AS<br>1657:2018 | ANSI<br>OSHA<br>1910.29 | BS<br>13700:2021 |
|------------------------|------------------------------|---------------------------------|------------------------|-----------------|-------------------------|------------------|



BIM



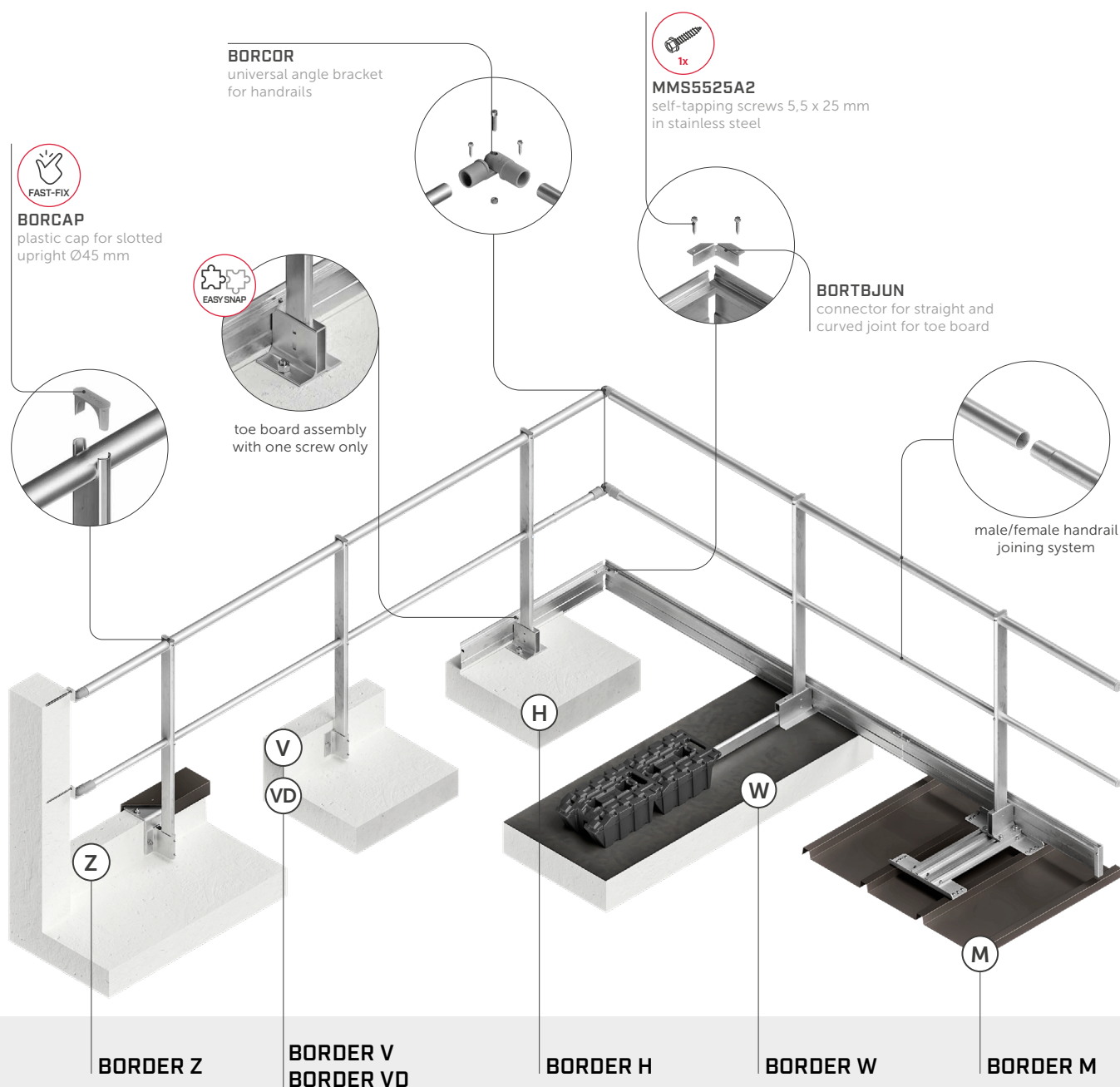
VIDEO



MANUALS



## BORDER | TYPES AND KEY ELEMENTS



## UPRIGHT TYPES



### AVAILABLE COLOURS

On request: anodised or powder-coated (RAL colours)

material:  
EN AW 6005A-T6

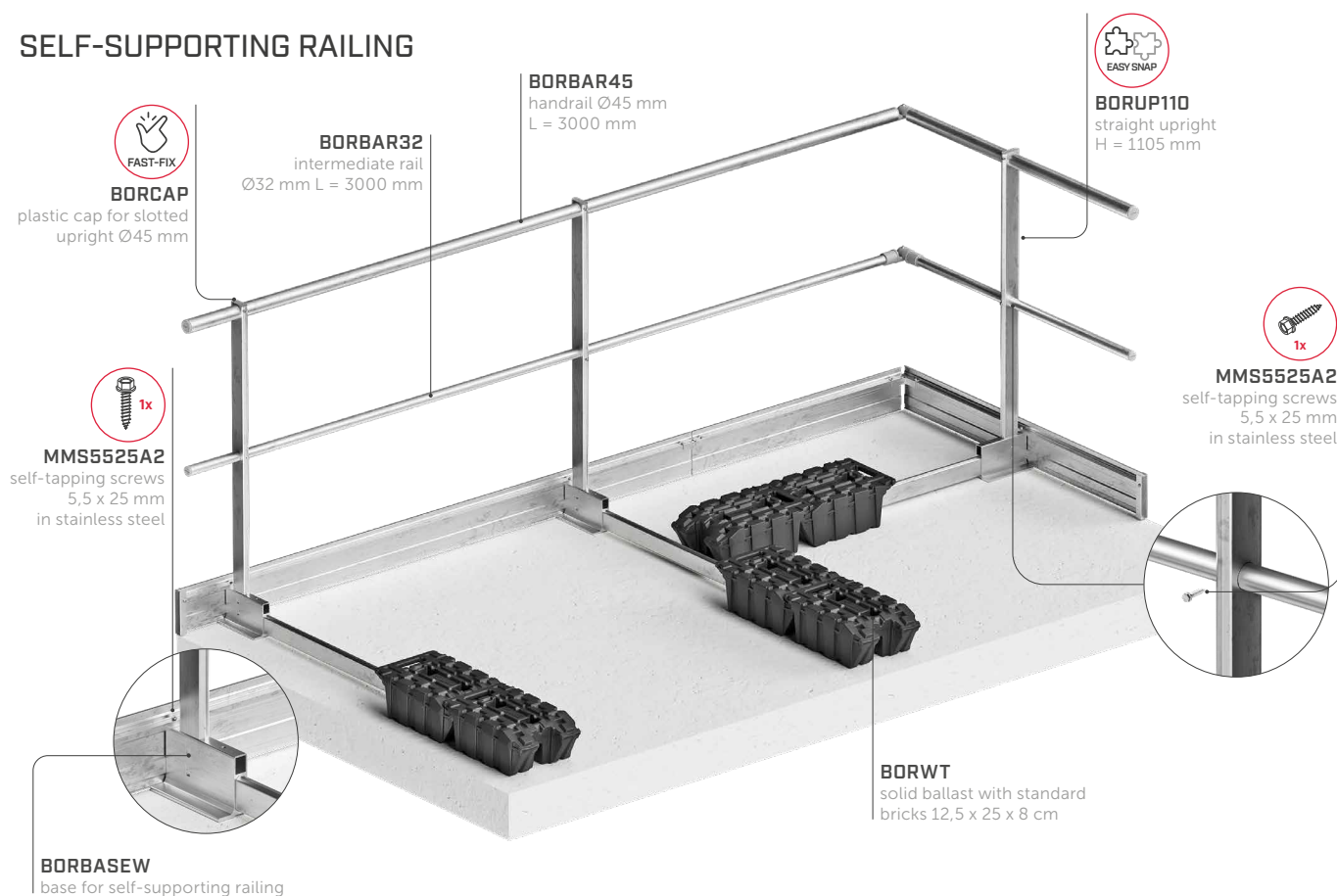
alu  
6005A



All railing types are available in straight, curved and folding versions. See page 145.

# BORDER W

## SELF-SUPPORTING RAILING



snap-fit cap and upright



rapid installation with snap-fit system,  
without the need for additional screws



use of only one screw  
for railing installation



toe board assembly  
with one screw only

## SPACING

| upright/frets      | H <sub>uprights</sub> | standards        |                       |                     |                  |
|--------------------|-----------------------|------------------|-----------------------|---------------------|------------------|
|                    |                       | EN 14122-3: 2016 | NTC 2018 + DLgs.61/08 | EN 13974+A1: 2024 A | NF E85-015: 2019 |
| straight + folding | 110 cm                | 150              | 100                   | 250                 | 150              |
|                    | 100 cm                | 160*             | 100*                  | 250*                | 160*             |
| curved             | 113 cm                | 145*             | 100*                  | 250*                | 145*             |

\* Spacings are interpolated based on the most critical case.  
See the technical data sheet for spacings related to standards not included in the table.

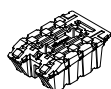
### substructure



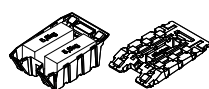
**C20/25** **CLT** **SHEATH** **PVC**

BORDER W can be installed on all 4 of the substructures without fasteners.

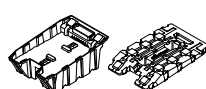
### BALLAST TYPES



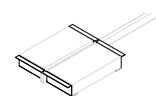
**BORWT**  
ballast with standard  
bricks 12,5 x 25 x 8 cm weight 12,5 kg



**BORWTBOX**  
hollow ballast to be filled with 2 bricks  
measuring 12,5 x 25 x 8 cm  
(not included)



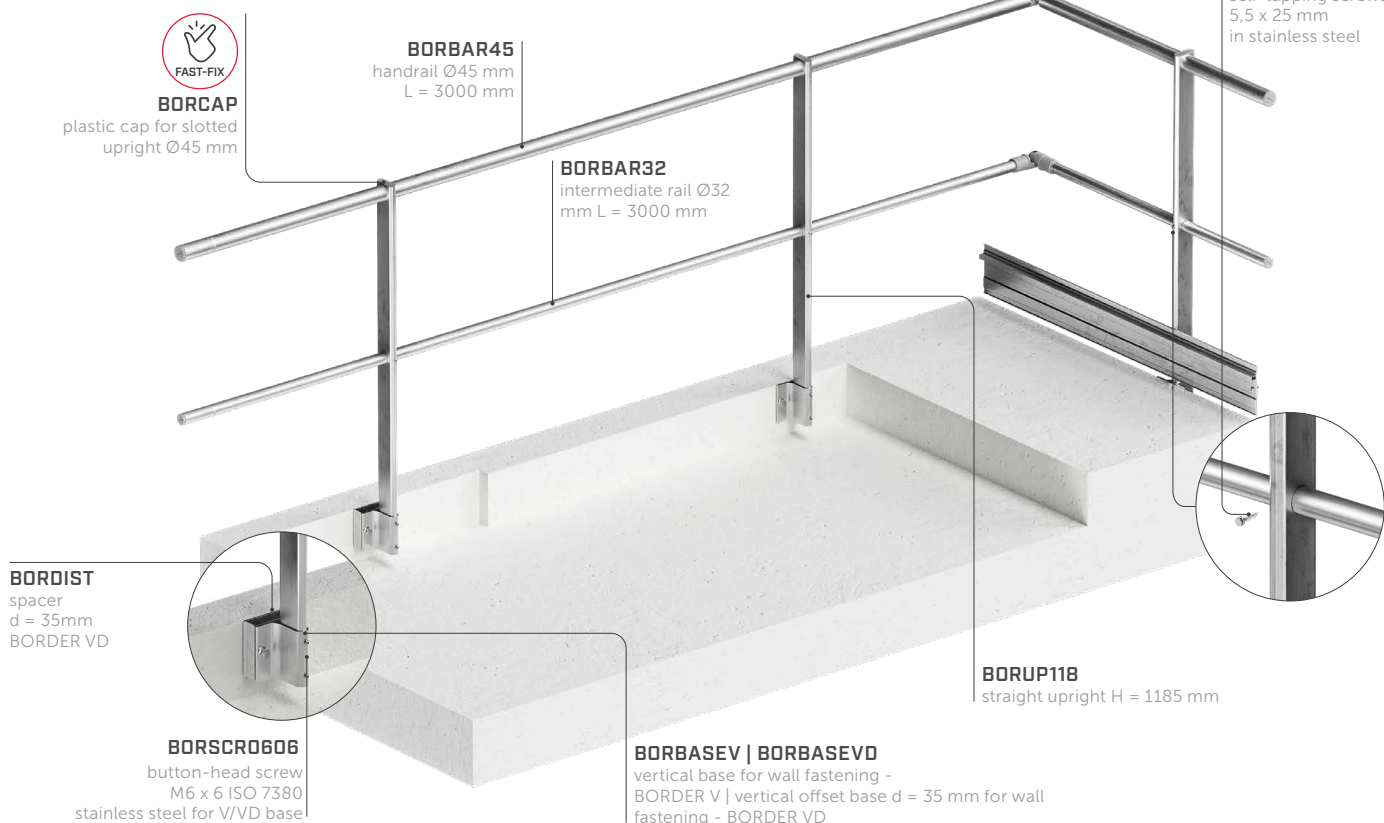
**BORWTBOX**  
hollow ballast to be filled  
with concrete or sand



**BORWTFRAME**  
frame for ballast with standard  
concrete slabs

# BORDER V/BORDER VD

## RAILING VERTICAL AND VERTICAL SPACED FASTENING



snap-fit cap and upright



use of only one screw  
for railing installation

## SPACING

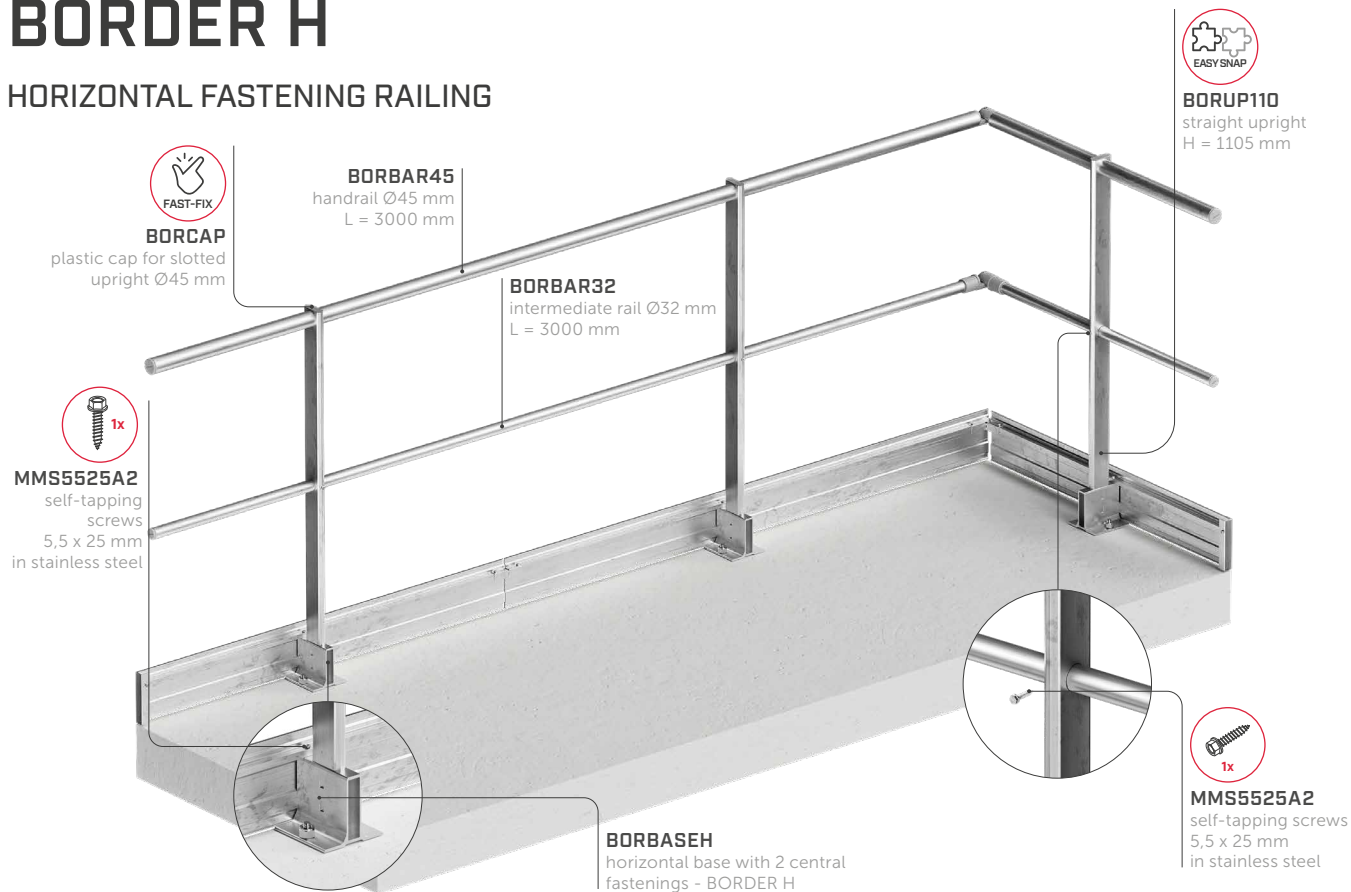
| upright/frets      | H <sub>uprights</sub> | spacing between uprights [cm] |                       |                     |                  |
|--------------------|-----------------------|-------------------------------|-----------------------|---------------------|------------------|
|                    |                       | EN 14122-3: 2016              | NTC 2018 + DLgs.81/08 | EN 13374+A1: 2024 A | NF E85-015: 2019 |
| straight           | 130 cm                | 150                           | 150                   | -                   | 150              |
|                    | 118 cm                | 160*                          | 160*                  | -                   | 160*             |
| straight + folding | 110 cm                | 165*                          | 170*                  | 250                 | 165*             |
|                    | 100 cm                | 170*                          | 180*                  | 250*                | 170*             |
| straight           | 76 cm                 | 185*                          | 180*                  | -                   | 185*             |
| curved             | 113 cm                | 160*                          | 170*                  | -                   | 160*             |

\* Spacings are interpolated based on the most critical case.  
See the technical data sheet for spacings related to standards not included in the table.

| substructure | fasteners       |
|--------------|-----------------|
| C20/25       | AB1 Ø12         |
|              | SKR Ø12         |
|              | INA Ø12 VIN-FIX |

# BORDER H

## HORIZONTAL FASTENING RAILING



snap-fit cap and upright



rapid installation with snap-fit system, without the need for additional screws



use of only one screw for railing installation



toe board assembly with one screw only

## SPACING

| upright/frets      | H <sub>uprights</sub> | spacing between uprights [cm] |                       |                     |                  |
|--------------------|-----------------------|-------------------------------|-----------------------|---------------------|------------------|
|                    |                       | EN 14122-3: 2016              | NTC 2018 + DLgs.81/08 | EN 13374+A1: 2024 A | NF E85-015: 2019 |
| straight + folding | 110 cm                | 160                           | 180                   | 250                 | 160              |
|                    | 100 cm                | 170*                          | 180*                  | 250*                | 170*             |
| straight           | 53 cm                 | 190*                          | 180*                  | -                   | 190*             |
| curved             | 113 cm                | 155*                          | 180*                  | -                   | 155*             |

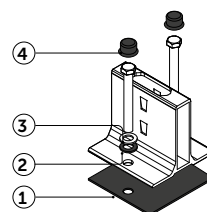
\*Spacings are interpolated based on the most critical case.  
See the technical data sheet for spacings related to standards not included in the table.

| substructure | fasteners       |
|--------------|-----------------|
| C20/25       | AB1 Ø12         |
|              | SKR Ø12         |
|              | INA Ø12 VIN-FIX |
| CLT          | VGS Ø13 HUS Ø12 |

### BASE H WATERPROOFING KIT

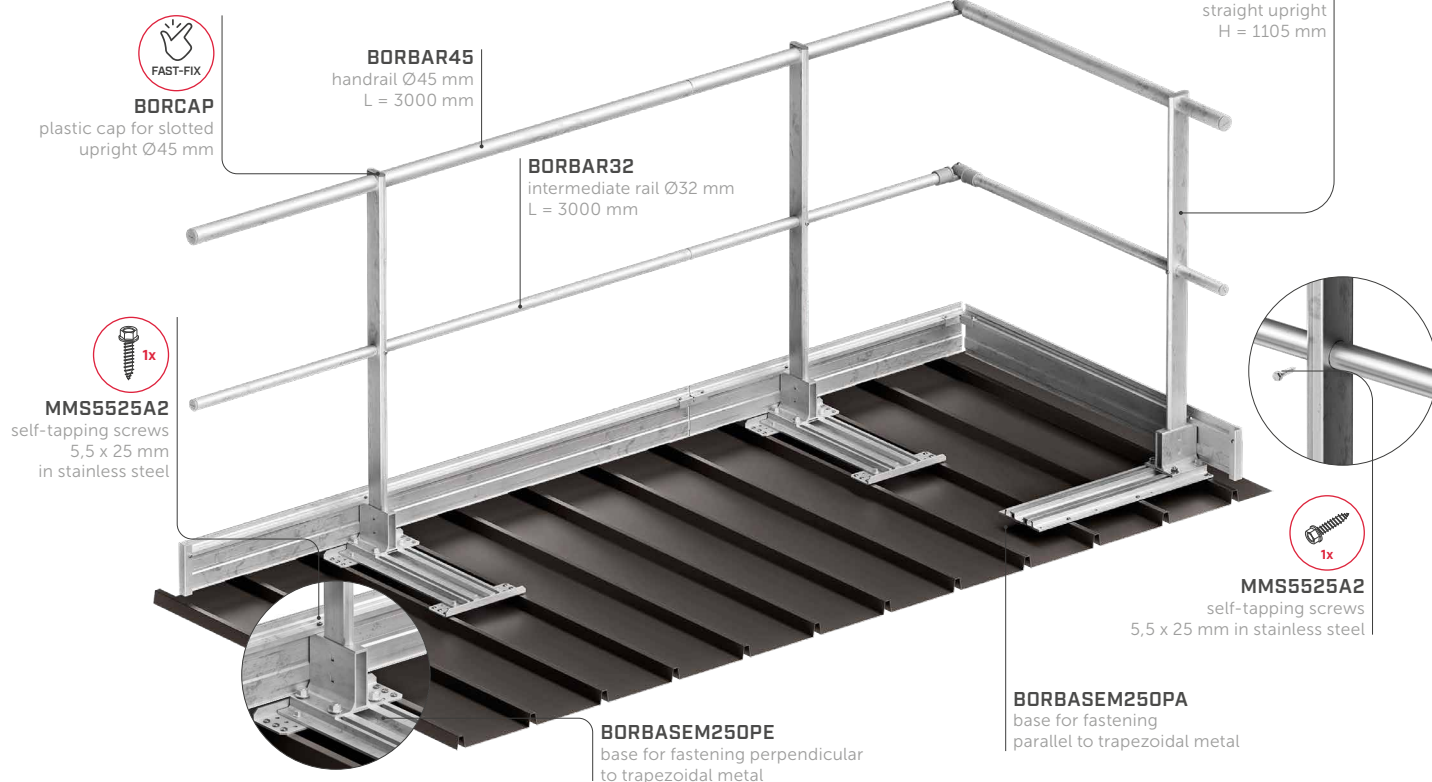
The waterproofing kit (code BORBASEHKIT) consists of washers and gaskets combined with chemical fastening. It ensures waterproofing and prevents water infiltration into the concrete structure.

- 1 x EPDM gasket
- 2 x EPDM washers for M12
- 2 x washers for M12
- 2 x protective caps for M12 nut



# BORDER M

## RAILING FASTENING ON TRAPEZOIDAL METAL ROOF



snap-fit cap and upright



rapid installation with snap-fit system, without the need for additional screws



use of only one screw for railing installation



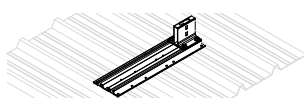
toe board assembly with one screw only

## SPACING BY FASTENER TYPE

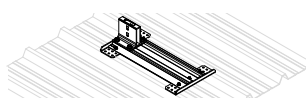
|                                  |                       | <div>EN 14122-3: 2016</div> <div>NTC 2018 + DLGS 81/08</div> <div>EN 13374+A1: 2024 A</div> <div>NF E85-015: 2019</div> |   |   |      |              |           |
|----------------------------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------|---|---|------|--------------|-----------|
| upright/frets                    | H <sub>uprights</sub> | spacing between uprights [cm]                                                                                           |   |   |      | substructure | fasteners |
| straight + folding + fret 250 mm |                       | 150                                                                                                                     | - | - | 150  |              | rivet 6,3 |
|                                  |                       | 150*                                                                                                                    | - | - | 150* |              |           |
| straight + folding + fret 333 mm |                       | 166                                                                                                                     | - | - | 166  |              |           |
|                                  |                       | 166*                                                                                                                    | - | - | 166* |              |           |

\* Spacings are interpolated based on the most critical case.  
See the technical data sheet for spacings related to standards not included in the table.

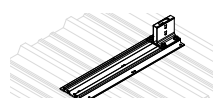
### BASE TYPES (excluding EPDM gasket and rivets)



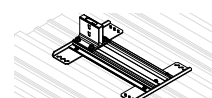
**BORBASEM250PA**  
base for trapezoidal metal for BORDER parallel to the frets, pitch 200 - 250mm



**BORBASEM250PE**  
base for trapezoidal metal for BORDER perpendicular to the frets, pitch 200 - 250mm



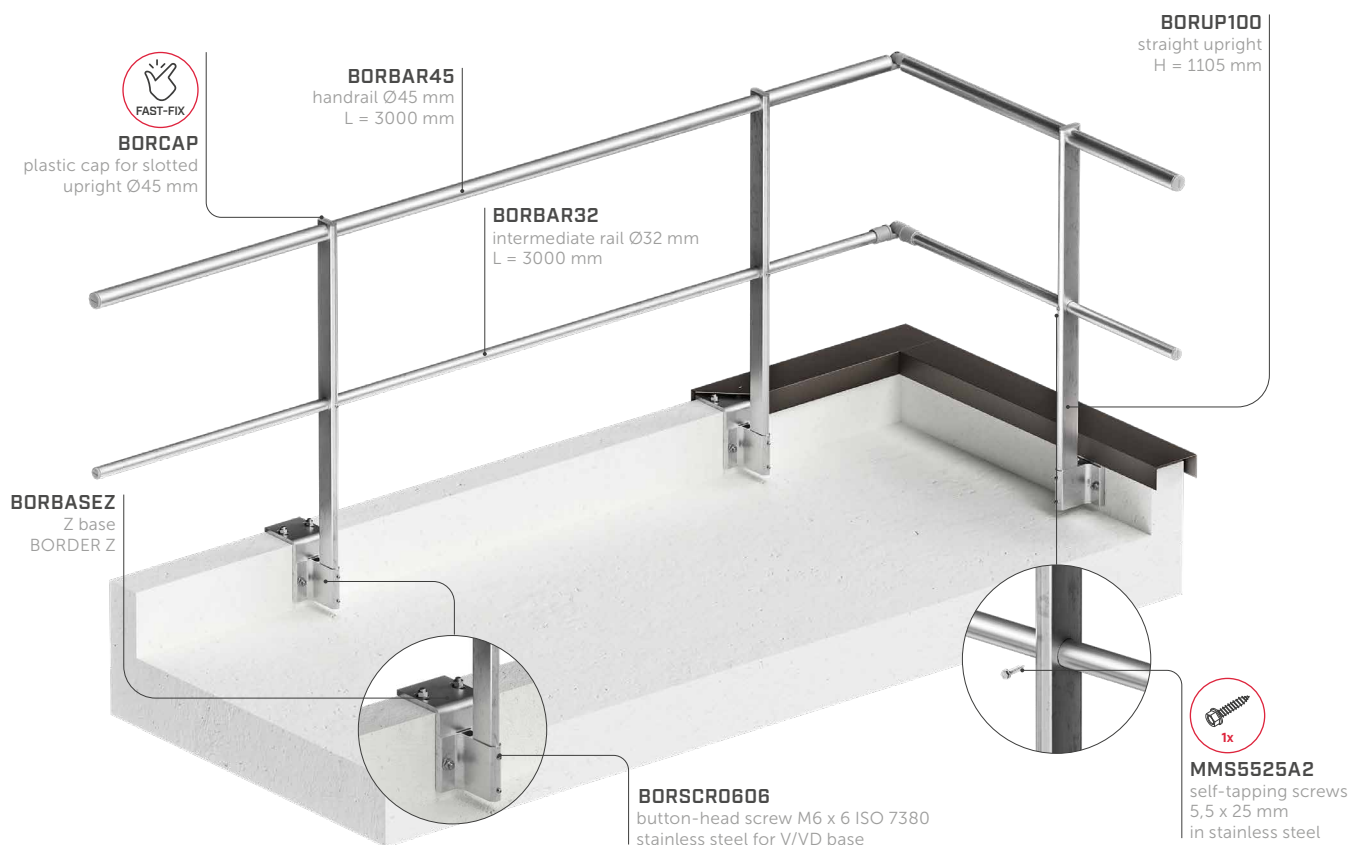
**BORBASEM333PA**  
base for trapezoidal metal for BORDER parallel to the frets, pitch 333 - 350mm



**BORBASEM333PE**  
base for trapezoidal metal for BORDER perpendicular to the frets, pitch 333-350 mm

# BORDER Z

## A Z FASTENING RAILING



snap-fit cap and upright



use of only one screw  
for railing installation



toe board assembly  
with one screw only

## SPACING

| upright/frets      | H <sub>uprights</sub> | spacing between uprights [cm] |                       |                     |                  |
|--------------------|-----------------------|-------------------------------|-----------------------|---------------------|------------------|
|                    |                       | EN 14122-3: 2016              | NTC 2018 + DLgs.81/08 | EN 13374-A1: 2024 A | NF E85-015: 2019 |
| straight + folding | 110 cm                | 150                           | 140                   | -                   | 150              |
|                    | 100 cm                | 160*                          | 140*                  | -                   | 160*             |
| curved             | 113cm                 | 145*                          | 100*                  | -                   | 145*             |

\* spacings are interpolated based on the most critical case.  
See the technical data sheet for spacings related to standards not included in the table.

| substructure | fasteners       |
|--------------|-----------------|
| C20/25       | AB1 Ø12         |
|              | SKR Ø12         |
|              | INA Ø12 VIN-FIX |

### BASE TYPES



**BORBASEZ**  
for kerb without insulation layer



**BORBASEZ70**  
for kerb with 70 mm thick insulation layer



**BORBASEZ100**  
for kerb with 100 mm thick insulation layer



**BORBASEZ130**  
for kerb with 130 mm thick insulation layer



**BORBASEZ160**  
for kerb with 160 mm thick insulation layer

# BORDER | components

## RAILS | CODES AND DIMENSIONS

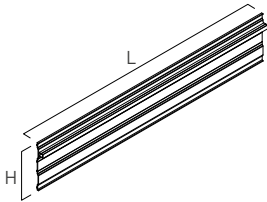
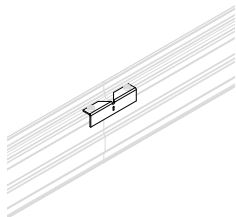
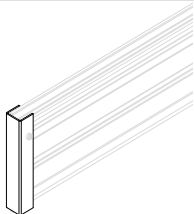
| CODE      | description                                       | d<br>[mm]<br>[in] | L<br>[mm]<br>[in] | pcs |  |
|-----------|---------------------------------------------------|-------------------|-------------------|-----|--|
| BORBAR45  | tapered handrail                                  | 45<br>1.77        | 3000<br>118 1/8   | 1   |  |
| BORBAR32  | tapered intermediate rail                         | 32<br>1.26        | 3000<br>118 1/8   | 1   |  |
| BORBAR45F | handrail for folding railing                      | 45<br>1.77        | 3000<br>118 1/8   | 1   |  |
| BORBAR32F | non-tapered intermediate rail for folding railing | 32<br>1.26        | 3000<br>118 1/8   | 1   |  |
| BORBAR45R | tapered and reinforced handrail                   | 45<br>1.77        | 3000<br>118 1/8   | 1   |  |

## UPRIGHTS | CODES AND DIMENSIONS

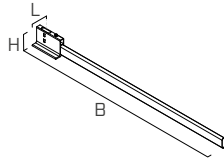
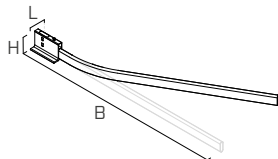
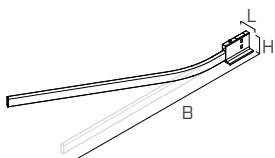
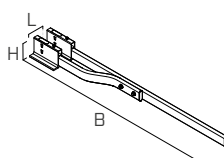
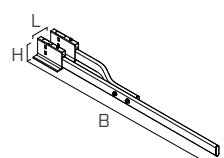
| CODE       | description                                           | H<br>[mm]<br>[in] | pcs |  |
|------------|-------------------------------------------------------|-------------------|-----|--|
| BORUP530WH | straight upright without holes for intermediate rail  | 535<br>21 1/16    | 1   |  |
| BORUP760WH | straight upright without holes for intermediate rail  | 765<br>30 1/8     | 1   |  |
| BORUP100   | straight upright                                      | 1005<br>39 9/16   | 1   |  |
| BORUP110   | straight upright                                      | 1105<br>43 1/2    | 1   |  |
| BORUP118   | straight upright                                      | 1185<br>46 5/8    | 1   |  |
| BORUP130   | straight upright                                      | 1305<br>51 3/8    | 1   |  |
| BORUP100F  | folding upright                                       | 1005<br>39 9/16   | 1   |  |
| BORUP110F  | folding upright                                       | 1105<br>43 1/2    | 1   |  |
| BORUP113C  | 15° curved upright                                    | 1125<br>44 5/16   | 1   |  |
| BORUP100R  | reinforced straight upright for EN 13374 and BS 13700 | 1005<br>39 9/16   | 1   |  |
| BORUP110R  | reinforced straight upright for EN 13374 and BS 13700 | 1105<br>43 1/2    | 1   |  |
| BORUP100AS | straight upright (AS 1657:2018)                       | 1005<br>39 9/16   | 1   |  |
| BORUP107US | straight upright (OSHA 1910.29)                       | 1075<br>42 5/16   | 1   |  |

# BORDER | components

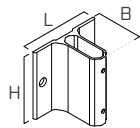
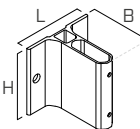
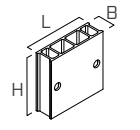
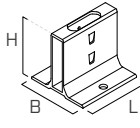
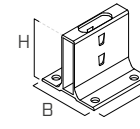
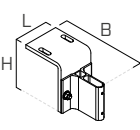
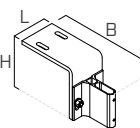
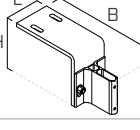
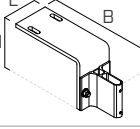
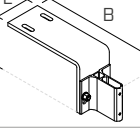
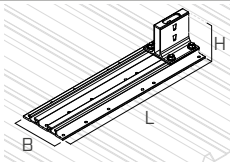
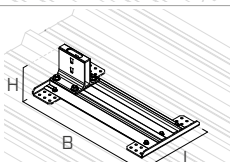
## TOE BOARD | CODES AND DIMENSIONS

| CODE     | description                                           | H<br>[mm]<br>[in] | L<br>[mm]<br>[in] | pcs |                                                                                      |
|----------|-------------------------------------------------------|-------------------|-------------------|-----|--------------------------------------------------------------------------------------|
| BORTB    | toe board                                             | 150<br>6          | 3000<br>118 1/8   | 1   |   |
| BORTBJUN | connector for straight and curved joint for toe board | -<br>-            | -<br>-            | 1   |   |
| BORTBCAP | end cap for toe board                                 | -<br>-            | -<br>-            | 1   |  |

## BASES | CODES AND DIMENSIONS

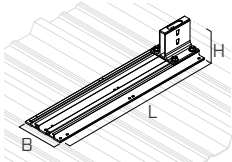
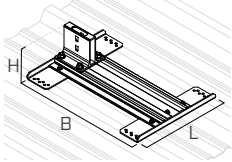
| CODE        | description                                                    | B<br>[mm]<br>[in] | H<br>[mm]<br>[in] | L<br>[mm]<br>[in] | pcs |                                                                                       |
|-------------|----------------------------------------------------------------|-------------------|-------------------|-------------------|-----|---------------------------------------------------------------------------------------|
| BORBASEW    | base for self-supporting railing - BORDER W                    | 1400<br>55 1/8    | 115<br>4 1/2      | 100<br>4          | 1   |  |
| BORBASEWFCL | base for left-hand folding self-supporting curve - BORDER W    | 1400<br>55 1/8    | 115<br>4 1/2      | 100<br>4          | 1   |  |
| BORBASEWFCR | base for right-hand folding self-supporting curve - BORDER W   | 1400<br>55 1/8    | 115<br>4 1/2      | 100<br>4          | 1   |  |
| BORBASEWFL  | base for left-hand folding self-supporting railing - BORDER W  | 750<br>29 1/2     | 115<br>4 1/2      | 100<br>4          | 1   |  |
| BORBASEWFR  | base for right-hand folding self-supporting railing - BORDER W | 750<br>29 1/2     | 115<br>4 1/2      | 100<br>4          | 1   |  |

## BASES | CODES AND DIMENSIONS

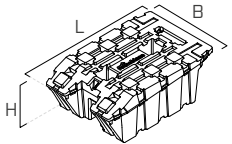
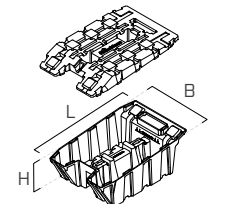
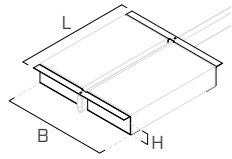
| CODE          | description                                                                                   | B<br>[mm]<br>[in] | H<br>[mm]<br>[in] | L<br>[mm]<br>[in] | pcs |                                                                                       |
|---------------|-----------------------------------------------------------------------------------------------|-------------------|-------------------|-------------------|-----|---------------------------------------------------------------------------------------|
| BORBASEV      | vertical base for wall fastening - BORDER V                                                   | 80<br>3 1/8       | 115<br>4 1/2      | 120<br>4 3/4      | 1   |    |
| BORBASEVD     | vertical offset base d = 35 mm for wall fastening - BORDER VD                                 | 107<br>4 3/16     | 115<br>4 1/2      | 120<br>4 3/4      | 1   |    |
| BORDIST       | spacer d = 35 mm - BORDER VD                                                                  | 35<br>1 3/8       | 115<br>4 1/2      | 120<br>4 3/4      | 1   |    |
| BORBASEH      | horizontal base with 2 central fastenings - BORDER H                                          | 120<br>4 3/4      | 115<br>4 1/2      | 125<br>4 15/16    | 1   |    |
| BORBASEH4H    | horizontal base with 4 fastenings for timber roofs - BORDER H                                 | 120<br>4 3/4      | 115<br>4 1/2      | 125<br>4 15/16    | 1   |   |
| BORBASEZ      | Z-base for kerb without insulation layer - BORDER Z                                           | 250<br>10         | 167<br>6 9/16     | 120<br>4 3/4      | 1   |  |
| BORBASEZ70    | Z-base for kerb with 70 mm thick insulation layer - BORDER Z                                  | 310<br>12 3/16    | 167<br>6 9/16     | 120<br>4 3/4      | 1   |  |
| BORBASEZ100   | Z-base for kerb with 100 mm thick insulation layer - BORDER Z                                 | 340<br>13 3/8     | 167<br>6 9/16     | 120<br>4 3/4      | 1   |  |
| BORBASEZ130   | Z-base for kerb with 130 mm thick insulation layer - BORDER Z                                 | 370<br>14 9/16    | 167<br>6 9/16     | 120<br>4 3/4      | 1   |  |
| BORBASEZ160   | Z-base for kerb with 160 mm thick insulation layer - BORDER Z                                 | 400<br>15 3/4     | 167<br>6 9/16     | 120<br>4 3/4      | 1   |  |
| BORBASEM250PA | base for trapezoidal metal for BORDER parallel to the frets, pitch 200-250 mm - BORDER M      | 175<br>6 7/8      | 140<br>5 1/2      | 630<br>24 13/16   | 1   |  |
| BORBASEM250PE | base for trapezoidal metal for BORDER perpendicular to the frets, pitch 200-250 mm - BORDER M | 540<br>21 1/4     | 143<br>5 5/8      | 280<br>11         | 1   |  |

# BORDER | components

## BASES | CODES AND DIMENSIONS

| CODE          | description                                                                                     | B<br>[mm]<br>[in] | H<br>[mm]<br>[in] | L<br>[mm]<br>[in] | pcs |                                                                                     |
|---------------|-------------------------------------------------------------------------------------------------|-------------------|-------------------|-------------------|-----|-------------------------------------------------------------------------------------|
| BORBASEM333PA | base for trapezoidal metal for BORDER parallel to the frets, pitch 333 - 350mm - BORDER M       | 175<br>6 7/8      | 140<br>5 1/2      | 730<br>28 3/4     | 1   |  |
| BORBASEM333PE | base for trapezoidal metal for BORDER perpendicular to the frets, pitch 333 - 350 mm - BORDER M | 540<br>21 1/4     | 143<br>5 5/8      | 380<br>15         | 1   |  |

## BALLAST | CODES AND DIMENSIONS

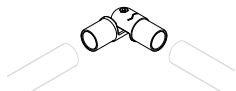
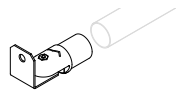
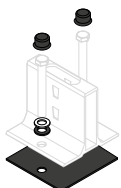
| CODE       | description                                                                                      | B<br>[mm]<br>[in] | H<br>[mm]<br>[in] | L<br>[mm]<br>[in] | pcs |                                                                                       |
|------------|--------------------------------------------------------------------------------------------------|-------------------|-------------------|-------------------|-----|---------------------------------------------------------------------------------------|
| BORWT      | recycled PP plastic-coated ballast, weight 12,5 kg                                               | 265<br>10 7/16    | 50<br>1 15/16     | 400<br>15 3/4     | 1   |   |
| BORWTBOX   | recycled PP plastic container for ballast for bricks or free-flowing material (concrete or sand) | 265<br>10 7/16    | 50<br>1 15/16     | 400<br>15 3/4     | 1   |  |
| BORWTFRAME | frame for ballast with concrete slabs                                                            | 570<br>22 7/16    | 80<br>3 1/8       | 530<br>20 7/8     | 2   |  |

## ACCESSORIES | CODES AND DIMENSIONS

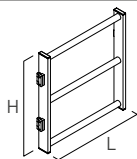
| CODE     | description                                           | pcs |                                                                                       |
|----------|-------------------------------------------------------|-----|---------------------------------------------------------------------------------------|
| BORCAP45 | plastic cap for handrail Ø45 mm (Ø1.77 inch)          | 1   |  |
| BORCAP32 | plastic cap for intermediate rail Ø32 mm (Ø1.26 inch) | 1   |  |
| BORCAP   | plastic cap for slotted upright Ø45 mm (Ø1.77 inch)   | 1   |  |

# BORDER | components

## ACCESSORIES | CODES AND DIMENSIONS

| CODE        | description                                               | pcs |                                                                                     |
|-------------|-----------------------------------------------------------|-----|-------------------------------------------------------------------------------------|
| BORCOR      | universal angle bracket for handrail and rails            | 1   |  |
| BORWALL     | universal wall-mounted end element for handrail and rails | 1   |  |
| BORBASEHKIT | waterproofing kit for BORDER H base                       | 1   |  |

## SAFETY GATE | CODES AND DIMENSIONS

| CODE       | description                     | L<br>[mm]<br>[in] | H<br>[mm]<br>[in] | pcs |                                                                                      |
|------------|---------------------------------|-------------------|-------------------|-----|--------------------------------------------------------------------------------------|
| BORGATE600 | safety gate with mounted hinges | 600<br>23 5/8     | 630<br>24 13/16   | 1   |  |

## INSTALLATION FASTENERS | CODES AND DIMENSIONS

| CODE      | description                        | d<br>[mm]<br>[in] | H<br>[mm]<br>[in] | pcs |                                                                                       |
|-----------|------------------------------------|-------------------|-------------------|-----|---------------------------------------------------------------------------------------|
| MMS5525A2 | self-tapping screw A2 Ø5,5 x 25 mm | 5,5<br>0.22       | 25<br>1           | 50  |  |

## TECHNICAL MANUALS | CODES AND DIMENSIONS

| CODE    | description            | pcs |                                                                                       |
|---------|------------------------|-----|---------------------------------------------------------------------------------------|
| BORMANW | manual for BORDER W    | 1   |  |
| BORMANV | manual for BORDER V/VD | 1   |                                                                                       |
| BORMANH | manual for BORDER H    | 1   |                                                                                       |
| BORMANM | manual for BORDERM     | 1   |                                                                                       |
| BORMANZ | manual for BORDER Z    | 1   |                                                                                       |