

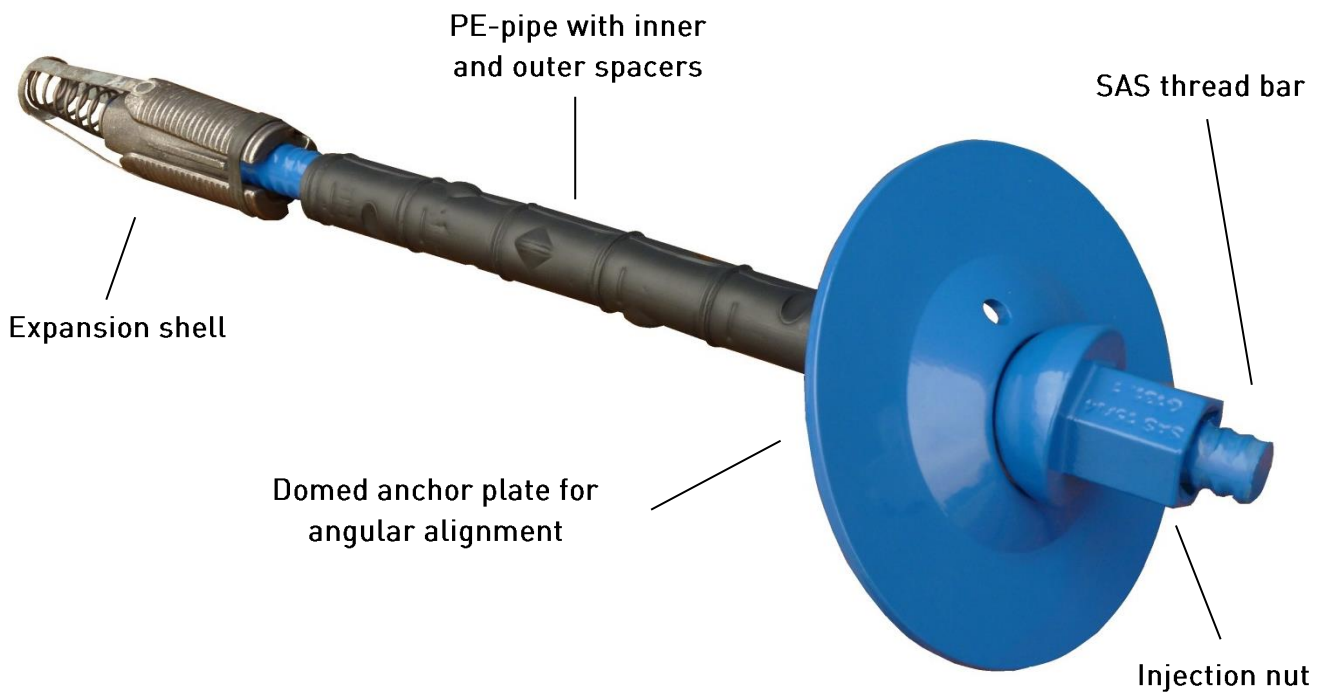
SAS Mining and Tunnelling SYSTEMS

for underground rock support

Rapid Grout Bolt (RG Bolt)



The SAS Rapid Grout Bolt combines in a simple way immediate anchorage with permanent rock support. The immediate support is given by activation of the RG bolt's expansion shell. In a second step the SAS Rapid Grout Bolt can be easily grouted through the injection nut and the PE-pipe.



Picture galvanizing acc. EN 1461 + coating acc. EN 12944

Bar characteristics

| SAS 670/800 | | | | SAS 650/800 | | | |
|-----------------------|--------------------|-------------|-------|-----------------------|--------------------|-------------|-------|
| $d \emptyset$ | [mm] | 22 | 18 | $d \emptyset$ | [mm] | 22 | 18 |
| $max d_A$ | [mm] | 25 | 21 | $max d_A$ | [mm] | 25 | 21 |
| c | [mm] | 8 | 8 | c | [mm] | 8 | 8 |
| f_{yk} | N/mm^2 | 670 | | f_{yk} | N/mm^2 | 650 | |
| f_{tk} | N/mm^2 | 800 | | f_{tk} | N/mm^2 | 800 | |
| A_5 | % | - | | A_5 | % | $\geq 18\%$ | |
| A_{10} | % | $\geq 10\%$ | | A_{10} | % | - | |
| A_{gt} | % | $\geq 5\%$ | | A_{gt} | % | - | |
| $F_{yk} (F_{0,2k})$ | [kN] | 255 | 170 | $F_{yk} (F_{0,2k})$ | [kN] | 247 | 165 |
| F_{tk} | [kN] | 304 | 204 | F_{tk} | [kN] | 304 | 204 |
| A | [mm ²] | 380 | 254 | A | [mm ²] | 380 | 254 |
| G | [kg/m] | 2,98 | 2,00 | G | [kg/m] | 2,98 | 2,00 |
| borehole- \emptyset | [mm] | 48-52 | 48-52 | borehole- \emptyset | [mm] | 48-52 | 48-52 |

Following ductility class B

Following ductility class C

Advantages of the SAS RG Bolt



- Immediate rock support by expansion shell and permanent rock support by fully grouted.
- Fast installation – mechanized or manually for temporary and permanent anchorage in one system
- Full load carrying capacity for pointed bolt and fully grouted bolt by the hot rolled coarse thread bar - no carrying capacity losses due to notch effect as with a fine cut thread
- Quick injection adapter for manual grouting available
- PE-Pipe with inner nubs for centralizing the bolt in the pipe and outer nubs for centralizing the bolt in the borehole
- Angular alignment up to 30° due to the combination of domed injection nut and special domed plate
- Bolt can be shortened to any length on site due to the continuous SAS coarse thread
- Permanent corrosion protection (galvanizing EN 1461 + coating EN 13438) over the entire length of the bar possible – even in the accessory area
- System combinable with different steel grades
- Injection adapter for all diameters and all common connection systems available

Corrosion protection systems of the SAS RG bolt

- Corrosion protected system through a combination of PE-pipe and grout
- Hot-dipped galvanized acc. EN 1461
- Powder coating acc. EN 12944 and EN 13438
- Wet coating acc. EN 12944
- Combination of hot-dipped galvanizing and powder or wet coating (Duplex)
- Sacrificial corrosion

Installation



- Drill borehole 48 - 52 mm
- Set RG Bolt
- Activate expansion shell



- "Attach and turn" quick injection adapter
- Grout through injections slots



- Finish grouting process when grout flows out of the vent hole

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