# Technical data sheet

POLY-GP
**General Purpose Resin Mortar**

Chemical anchor for use in concrete and masonry. Specially formulated for light or medium duty fixing into hollow or solid base materials. Poly-GP300 is easy to use and fast curing, it enables good performance when used in applications such as fixing architectural steel work, cable trays, hand rails and gates.


## Features

### Material

- Styrene free polyester
- Use with Simpson Strong-Tie threaded rod (LMAS) : galvanised steel and stainless A4-70

### Benefits

- Fast curing.
- Non-flammable.
- Low odour.
- Colour changes when cured.

## Applications

### Header member

**Hollow or solid masonry.**

### For Use With

- Blinds
- Hinges
- Air conditioners
- Satellite Dishes
- Boilers

*Fixation d'une cloture*

SIMPSON Strong-Tie

# Technical Data

## Références

| References | Product information | | | | | | |
|---|---|---|---|---|---|---|---|
| | DB nr. | NOBB nr. | Grey color | Beige color | Content [ml] | Weigth [kg] | Packaging qty [pcs] |
| POLYGP300GB-PL | - | - | - | x | 300 | 0.586 | 12 |
| POLYGP420B-PL | - | - | - | x | 420 | 0.842 | 12 |

## Design resistance – Tension – NRd [kN] – Carbon steel 5.8

| References | Design resistance – $N_{Rd}$ – Carbon steel 5.8 [kN] | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Non-cracked concrete | | | | | | | |
| | $h_{ef}$ = 8d | | | | $h_{ef}$ = 12d | | | |
| | C20/25 | C30/37 | C40/50 | C50/60 | C20/25 | C30/37 | C40/50 | C50/60 |
| POLY-GP + LMAS M8 | 4.6 | 5 | 5.3 | 5.5 | 6.9 | 7.4 | 7.9 | 8.2 |
| POLY-GP + LMAS M12 | 10 | 10.9 | 11.6 | 12 | 15.1 | 16.3 | 17.3 | 17.9 |
| POLY-GP + LMAS M16 | 14.3 | 15.4 | 16.4 | 17 | 21.4 | 23.2 | 24.7 | 25.5 |

Concrete :
1. The design loads have been calculated using the partial safety factors for resistances stated in ETA-approval(s). The loading figures are valid for unreinforced concrete and reinforced concrete with a rebar spacing s ≥ 15 cm (any diameter) or with a rebar spacing s ≥ 10 cm, if the rebar diameter is 10mm or smaller.
2. The figures for shear are based on a single anchor without influence of concrete edges. For anchorages close to edges (c ≤ max [10 hef; 60d]) the concrete edge failure shall be checked per ETAG 001, Annex C, design method A.
3. Concrete is considered non-cracked when the tensile stress within the concrete is\sigmaL +\sigmaR ≤ 0. In the absence of detailed verification\sigmaR = 3 N/mm² can be assumed (\sigmaL equals the tensile stress within the concrete induced by external loads, anchors loads included).

## Design resistance – Tension – NRd [kN] – Stainless steel A4-70

| References | Design resistance – $N_{Rd}$ – Stainless steel A4-70 [kN] | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Non-cracked concrete | | | | | | | |
| | $h_{ef}$ = 8d | | | | $h_{ef}$ = 12d | | | |
| | C20/25 | C30/37 | C40/50 | C50/60 | C20/25 | C30/37 | C40/50 | C50/60 |
| POLY-GP + LMAS M8 | 4.6 | 5 | 5.3 | 5.5 | 6.9 | 7.4 | 7.9 | 8.2 |
| POLY-GP + LMAS M12 | 10 | 10.9 | 11.6 | 12 | 15.1 | 16.3 | 17.3 | 17.9 |
| POLY-GP + LMAS M16 | 14.3 | 15.4 | 16.4 | 17 | 21.4 | 23.2 | 24.7 | 25.5 |

Concrete :
1. The design loads have been calculated using the partial safety factors for resistances stated in ETA-approval(s). The loading figures are valid for unreinforced concrete and reinforced concrete with a rebar spacing s ≥ 15 cm (any diameter) or with a rebar spacing s ≥ 10 cm, if the rebar diameter is 10mm or smaller.
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## Design resistance – Shear – VRd [kN] – Carbon steel 5.8

| References | Design resistance – $V_{Rd}$ – Carbon steel 5.8 [kN] | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Non-cracked concrete | | | | | | | |
| | $h_{ef}$ = 8d | | | | $h_{ef}$ = 12d | | | |
| | C20/25 | C30/37 | C40/50 | C50/60 | C20/25 | C30/37 | C40/50 | C50/60 |
| POLY-GP + LMAS M8 | 7.2 | 7.2 | 7.2 | 7.2 | 7.2 | 7.2 | 7.2 | 7.2 |
| POLY-GP + LMAS M12 | 16.8 | 16.8 | 16.8 | 16.8 | 16.8 | 16.8 | 16.8 | 16.8 |
| POLY-GP + LMAS M16 | 31.2 | 31.2 | 31.2 | 31.2 | 31.2 | 31.2 | 31.2 | 31.2 |

Concrete :
1. The design loads have been calculated using the partial safety factors for resistances stated in ETA-approval(s). The loading figures are valid for unreinforced concrete and reinforced concrete with a rebar spacing s ≥ 15 cm (any diameter) or with a rebar spacing s ≥ 10 cm, if the rebar diameter is 10mm or smaller.
2. The figures for shear are based on a single anchor without influence of concrete edges. For anchorages close to edges (c ≤ max [10 hef; 60d]) the concrete edge failure shall be checked per ETAG 001, Annex C, design method A.
3. Concrete is considered non-cracked when the tensile stress within the concrete is\sigmaL +\sigmaR ≤ 0. In the absence of detailed verification\sigmaR = 3 N/mm² can be assumed (\sigmaL equals the tensile stress within the concrete induced by external loads, anchors loads included).

## Design resistance – Shear – VRd [kN] – Stainless steel A4-70

| References | Design resistance – $V_{Rd}$ – Stainless steel A4-70 [kN] | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Non-cracked concrete | | | | | | | |
| | $h_{ef}$ = 8d | | | | $h_{ef}$ = 12d | | | |
| | C20/25 | C30/37 | C40/50 | C50/60 | C20/25 | C30/37 | C40/50 | C50/60 |
| POLY-GP + LMAS M8 | 8.3 | 8.3 | 8.3 | 8.3 | 8.3 | 8.3 | 8.3 | 8.3 |
| POLY-GP + LMAS M12 | 19.2 | 19.2 | 19.2 | 19.2 | 19.2 | 19.2 | 19.2 | 19.2 |
| POLY-GP + LMAS M16 | 34.3 | 34.3 | 34.3 | 34.3 | 35.3 | 35.3 | 35.3 | 35.3 |

Concrete :
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## Design resistance – Bending moment – MRd [Nm]

| References | Design resistance – Bending moment – $M_{Rd}$ [Nm] | |
|---|---|---|
| | Carbon steel 5.8 | Stainless steel A4-70 |
| POLY-GP + LMAS M8 | 15.2 | 16.7 |
| POLY-GP + LMAS M12 | 52.8 | 59 |
| POLY-GP + LMAS M16 | 133.6 | 149.4 |

Concrete :
1. The design loads have been calculated using the partial safety factors for resistances stated in ETA-approval(s). The loading figures are valid for unreinforced concrete and reinforced concrete with a rebar spacing s ≥ 15 cm (any diameter) or with a rebar spacing s ≥ 10 cm, if the rebar diameter is 10mm or smaller.
2. The figures for shear are based on a single anchor without influence of concrete edges. For anchorages close to edges (c ≤ max [10 hef; 60d]) the concrete edge failure shall be checked per ETAG 001, Annex C, design method A.
3. Concrete is considered non-cracked when the tensile stress within the concrete is\sigmaL +\sigmaR ≤ 0. In the absence of detailed verification\sigmaR = 3 N/mm² can be assumed (\sigmaL equals the tensile stress within the concrete induced by external loads, anchors loads included).

## Design resistance – hef = 80 mm (≤ M8) or 85 mm (≥ M10) – Carbon steel ≥ 4.6 / Stainless steel ≥ A2-70

| References | Design resistance – Carbon steel ≥ 4.6 / stainless steel ≥ A2-70 | | | |
|---|---|---|---|---|
| | $h_{ef}$ = 80 mm (≤ M8) or 85 mm (≥ M10) | | | |
| | Tension - $N_{Rd}$ [kN] | | Shear - $V_{Rd}$ [kN] | |
| | Solid Clay Masonry | Hollow Masonry | Solid Clay Masonry | Hollow Masonry |
| POLY-GP + LMAS M6 | 1.6 | 0.8 | 2.4 | 0.8 |
| POLY-GP + LMAS M8 | 1.6 | 0.8 | 2.4 | 0.8 |
| POLY-GP + LMAS M12 | 1.6 | 0.8 | 2.8 | 0.8 |

**Masonry :**

| | Compressive strength $f_b$ [N/mm²] | Bulk density ρ [kg/m³] |
|---|---|---|
| Solid clay masonry | ≥ 18 | ≥ 1600 |
| Hollow masonry | ≥ 6 | ≥ 900 |

1. The design resistances have been calculated using the partial safety factors for resistances stated in ETA-approval(s).
2. The recommended loads have been calculated using the partial safety factors for resistances stated in ETA-approval(s) and with a partial safety factor for actions of γF=1.4.
3. For combined tension and shear loads or anchor groups and/or in case of edge influence, a calculation acc. TR 054, design method A shall be performed. For details see ETA - assessment(s)
4. Temperature range: -40°C/+40°C (Tmlp = +24°C)
5. Coefficiant factor β for in situ tests acc. ETAG 029 see ETA-19/0642; Annex C2
6. Displacements under service load see ETA-19/0642; Annex C2 & C3

# Technical data sheet

POLY-GP
**General Purpose Resin Mortar**

## Design resistance – Bending moment – MRd [Nm]

| References | Design resistance – Bending moment – $M_{Rd}$ [Nm] | | |
|---|---|---|---|
| | Carbon steel 5.8 | Carbon steel 8.8 | Stainless steel ≥ A2-70 |
| POLY-GP + LMAS M6 | 6.4 | 9.6 | 7.1 |
| POLY-GP + LMAS M8 | 15.2 | 24 | 16.7 |
| POLY-GP + LMAS M12 | 52.8 | 84 | 59 |

**Masonry :**

| | Compressive strength $f_b$ [N/mm²] | Bulk density [kg/m$^3$] |
|---|---|---|
| Solid clay masonry | ≥ 18 | ≥ 1600 |
| Hollow masonry | ≥ 6 | ≥ 900 |

1. The design resistances have been calculated using the partial safety factors for resistances stated in ETA-approval(s).
2. The recommended loads have been calculated using the partial safety factors for resistances stated in ETA-approval(s) and with a partial safety factor for actions of γF=1.4.
3. For combined tension and shear loads or anchor groups and/or in case of edge influence, a calculation acc. TR 054, design method A shall be performed. For details see ETA - assessment(s)
4. Temperature range: -40°C/+40°C (Tmlp = +24°C)
5. Coefficiant factor β for in situ tests acc. ETAG 029 see ETA-19/0642; Annex C2
6. Displacements under service load see ETA-19/0642; Annex C2 & C3

# Installation

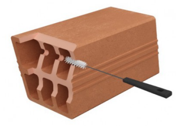
## Curing Schedule

| Temperature of the anchorage base $T_{base\ material}$ | Working time (Gel time) $t_{gel}$ | Curing time (in dry concrete) $t_{cure,\ dry}$ | Curing time (in wet concrete) $t_{cure,\ wet}$ |
|---|---|---|---|
| 0°C ≤ $T_{base\ material}$ < +10°C | 20 min | 90 min | 3:00 h |
| +10°C ≤ $T_{base\ material}$ < +20°C | 9 min | 60 min | **2:00 h** |
| +20°C ≤ $T_{base\ material}$ < +30°C | 5 min | 30 min | 1:00 h |
| +20°C ≤ $T_{base\ material}$ ≤ +40°C | **3 min** | 20 min | 40 min |

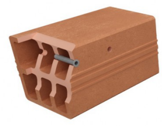
- **Manual Air Cleaning (MAC) for all drill hole diameters d0 ≤ 24 mm and drill holl depth h0 ≤ 10d :**
  - **4x blowing (hand pump)**
  - **4x brushing (twisting motion)**
  - **4x blowing (Hand pump)**
- **Compressed Air Cleaning (CAC) for all drill hole diameters d0 and drill hole depths :**
  - **2x blowing (min. 6 bar - oil free compressed air)**
  - **2x brushing**
  - **2x blowing (min. 6 bar - oil free compressed air)**
- **Cartridge temperature (Bond material) : ≥ +20°C**

# POLY-GP
## General Purpose Resin Mortar

*Drill.*

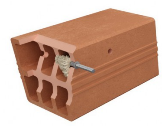


*Brush.*

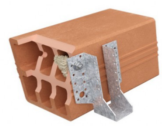


*Insert sieve.*

*Inject the resin.*



*Insert the rod, turning slowly.*



*Once set, full load capacity is reached.*

*Drill.*

*Remove dust by brushing and blowing,*

*Fill the hole to half or two thirds, Withdrawing the nozzles with each pump.*

*Insert the rod, turning slowly.*

*Once set, full load capacity is reached.*

## Installation parameters – Concrete

| References | Installation parameters - Concrete | | | | | |
|---|---|---|---|---|---|---|
| | Ø drilling [$d_0$] [mm] | Max. fixture hole Ø [$d_f$] [mm] | Drilling depth (8d) [$h_0$=$h_{ef}$=8d] [mm] | Drilling depth (12d) [$h_0$=$h_{ef}$=12d] [mm] | Wrench size [SW] | Installation torque [$T_{inst}$] [Nm] |
| POLY-GP + LMAS M8 | 10 | 9 | 64 | 96 | 13 | 8 |
| POLY-GP + LMAS M12 | 14 | 14 | 96 | 144 | 19 | 15 |
| POLY-GP + LMAS M16 | 18 | 18 | 128 | 192 | 24 | 25 |

## Spacing, edge distances and member thickness – Concrete

| References | Spacing, edge distance and member thickness - Concrete | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Effective embedment depth (8d) [$h_{ef,8d}$] [mm] | Characteristic spacing for $h_{ef,8d}$ [$S_{cr,N}$] [mm] | Characteristic edge distance for $h_{ef,8d}$ [$c_{cr,N}$] [mm] | Min. member thickness for $h_{ef,8d}$ [$h_{min}$] [mm] | Effective embedment depth (12d) [$h_{ef,12d}$] [mm] | Characteristic spacing for $h_{ef,12d}$ [$S_{cr,N}$] [mm] | Characteristic edge distance for $h_{ef,12d}$ [$c_{cr,N}$] [mm] | Min. member thickness for $h_{ef,12d}$ [$h_{min}$] [mm] | Min. spacing [$S_{min}$] [mm] | | Min. edge distance [$C_{min}$] [mm] | |
| | | | | | | | | | 8d | 12d | 8d | 12d |
| POLY-GP + LMAS M8 | 64 | 192 | 96 | 100 | 96 | 288 | 144 | 126 | 32 | 48 | 32 | 48 |
| POLY-GP + LMAS M12 | 96 | 288 | 144 | 126 | 144 | 432 | 216 | 174 | 48 | 72 | 48 | 72 |
| POLY-GP + LMAS M16 | 128 | 384 | 192 | 158 | 192 | 576 | 288 | 222 | 64 | 96 | 64 | 96 |

## Installation parameters – Masonry – Solid clay masonry

| References | Installation parameters - Solid clay masonry | | | |
|---|---|---|---|---|
| | Ø drilling [$d_0$] [mm] | Max. fixture hole Ø [$d_f$] [mm] | Drilling depth [$h_1$] [mm] | Installation torque [$T_{inst}$] [Nm] |
| POLY-GP + LMAS M6 | 8 | 7 | 85 | 2 |
| POLY-GP + LMAS M8 | 10 | 9 | 85 | 2 |
| POLY-GP + LMAS M12 | 14 | 14 | 90 | 2 |

## Installation parameters – Masonry – Hollow masonry

| References | Installation parameters - Hollow masonry | | | |
|---|---|---|---|---|
| | Ø drilling [$d_0$] [mm] | Max. fixture hole Ø [$d_f$] [mm] | Drilling depth [$h_1$] [mm] | Installation torque [$T_{inst}$] [Nm] |
| POLY-GP + LMAS M6 | 12 | 7 | 85 | 1.5 |
| POLY-GP + LMAS M8 | 12 | 9 | 85 | 1.5 |
| POLY-GP + LMAS M12 | 16 | 14 | 90 | 1.5 |

## Spacing, edge distances and member thickness – Masonry – Solid clay masonry

| References | Spacing, edge distance and member thickness - Solid clay masonry | | | |
|---|---|---|---|---|
| | Min. spacing [$S_{min}$] [mm] | | | Min. edge distance [$C_{min}$] [mm] |
| | $s_{cr,N} = s_{min}$ | $s_{cr,N}$ ǁ = $s_{min}$ ǁ | $s_{cr,N}{}^{T} = s_{min}{}^{T}$ | $c_{cr,N} = c_{min}$ |
| POLY-GP + LMAS M6 | 240 | - | - | 120 |
| POLY-GP + LMAS M8 | 240 | - | - | 120 |
| POLY-GP + LMAS M12 | 255 | - | - | 127.5 |

## Spacing, edge distances and member thickness – Masonry – Hollow masonry

| References | Spacing, edge distance and member thickness - Hollow masonry | | | |
|---|---|---|---|---|
| | Min. spacing [$S_{min}$] [mm] | | | Min. edge distance [$C_{min}$] [mm] |
| | $s_{cr,N} = s_{min}$ | $s_{cr,N}$ ǁ = $s_{min}$ ǁ | $s_{cr,N}{}^{T} = s_{min}{}^{T}$ | $c_{cr,N} = c_{min}$ |
| POLY-GP + LMAS M6 | - | 250 | 120 | 100 |
| POLY-GP + LMAS M8 | - | 250 | 120 | 100 |
| POLY-GP + LMAS M12 | - | 250 | 120 | 100 |