

# ResEP-16

High performance epoxy resin



A Simpson Strong-Tie® Company

The information in this technical data sheet is valid for the S&P range of products, systems and solutions. Please note that the information in your country may vary. Visit [sp-reinforcement.eu](http://sp-reinforcement.eu) to find your local branch.

## DESCRIPTION

ResEP-16 is a pure epoxy resin mortar (chemical anchoring) suitable for high performance fixing applications and heavy loads in cracked and non-cracked concrete. Due to the long working time of ResEP-16, it is ideal for use in warm climates and in holes with large diameters, as well as on applications with great anchorage depths. Meets the requirements for the highest demands in the field of anchoring technology.

## SCOPE OF APPLICATION

### Support materials

- Concrete  $\geq$  C20/25 - C50/60
- Heavily compacted natural stone (please contact S&P for further information before use)

### Applications

- Steel and metal construction
- Anchoring of supporting steel structures (e.g. steel supports, steel girders, etc.)
- Highly stressed construction anchorages
- Facade substructures
- Subsequent reinforcement connections (foundations, columns, slabs, etc.)

## PERFORMANCE FEATURES

- ETA-16/0696 for anchoring in concrete, expansion-free anchorage, small edge distances and centre distances
- High load bearing capacity due to high bonding strength
- Suitable for installation in damp and wet drill holes (water-filled holes are not permitted!)
- Suitable for use in hot and humid conditions without problems
- High load capacity, easy to dispense
- Shrinkage-free curing for large diameters and unnecessarily large holes (oversized)
- VOC emission class **A+**

## PRODUCT DATA

### Appearance

2-component injection mortar based on epoxy resin

Colour: Teal

### Packaging

Dual-cartridge: 600 ml or 1500 ml

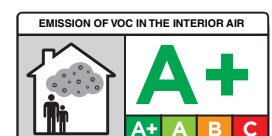
Box: 10 x 600 ml Dual-cartridges or  
4 x 1500 ml Dual-cartridges

Pallet: 720 x 600 ml Dual-cartridges or  
288 x 1500 ml Dual-cartridges

Incl. 2 pcs. nozzles per Dual-cartridge

### Storage

In unopened, undamaged original packaging and dry storage conditions between +7 °C and +32 °C the product has at least 24 months of shelf life.



## Maximum permissible loads for anchors without influence of centre and edge distances in the temperature range I 1) 2) 3)

References	Embedment depth (mm)	Tension (kN)		Shear (kN)		Bending-moment (Nm) Anchor rod 5.8
		Cracked concrete C20/25	Un-cracked concrete C20/25	Cracked concrete C20/25	Un-cracked concrete C20/25	
ResEP-16 + M12 (h <sub>ef</sub> =70mm)	70	5.40	10	12	12	37.70
ResEP-16 + M12 (h <sub>ef</sub> =240mm)	240	18.40	20	12	12	37.70
ResEP-16 + M16 (h <sub>ef</sub> =80mm)	80	6.10	12.30	17.20	22.20	94.80
ResEP-16 + M16 (h <sub>ef</sub> =320mm)	320	24.60	37.60	22.20	22.20	94.80
ResEP-16 + M20 (h <sub>ef</sub> =90mm)	90	5.70	14.60	16.10	34.80	185.70
ResEP-16 + M20 (h <sub>ef</sub> =400mm)	400	25.60	58.50	34.80	34.80	185.70
ResEP-16 + M24 (h <sub>ef</sub> =100mm)	100	7.60	17.10	21.60	48	320.50
ResEP-16 + M24 (h <sub>ef</sub> =480mm)	480	36.90	84.20	50.20	50.20	320.50
ResEP-16 + M27 (h <sub>ef</sub> =110mm)	110	9.50	19.80	26.60	55.40	475.40
ResEP-16 + M27 (h <sub>ef</sub> =540mm)	540	46.70	109	65.70	65.70	475.40

1) In case of interaction of tensile and shear loads (lever arm) as well as anchor groups and/or edge influence, a design according to TR 029 or GEN/TS 1992-4, taking into account approval ETA-16/0696, shall be performed.

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  $\gamma_F=1.4$ .

The load figures are valid for reinforced concrete with a rebar spacing 15cm (any diameter) or with a rebar spacing 15cm if the rebar diameter is 10mm or smaller.

3) Temperature range I: -40°C to +43°C (max. long-term temperature : +24°C; max. short-term temperature : +43°C). Temperature range II: -40°C to +65°C (max. long-term temperature : +43°C; max. short-term temperature : +65°C).

TECHNICAL CHARACTERISTICS

References	Ø Drilling diameter [mm]	Ø Embedment depth [mm]	Ø Max. diameter of hole in the fixture [mm]	Wrench size [WS]	Installation Torque T <sub>inst max</sub> [Nm]	Char. centre distance S <sub>cr,N</sub> [mm]	Min. edge distance C <sub>min</sub> [mm]	Char. edge distance C <sub>cr,N</sub> [mm]	Minimum spacing S <sub>min</sub> [mm]	Minimum member thickness h <sub>min</sub> [mm]
ResEP-16 + M12 (h <sub>ef</sub> =70mm)	14	70	14	19	40	210	45	105	80	100
ResEP-16 + M12 (h <sub>ef</sub> =240mm)	14	240	14	19	40	720	45	360	80	270
ResEP-16 + M16 (h <sub>ef</sub> =80mm)	18	80	18	24	60	240	60	120	100	116
ResEP-16 + M16 (h <sub>ef</sub> =320mm)	18	320	18	24	60	960	60	480	100	356
ResEP-16 + M20 (h <sub>ef</sub> =90mm)	24	90	22	30	80	270	70	135	115	138
ResEP-16 + M20 (h <sub>ef</sub> =400mm)	24	400	22	30	80	1.200	70	600	115	448
ResEP-16 + M24 (h <sub>ef</sub> =100mm)	28	100	26	36	100	300	80	150	135	156
ResEP-16 + M24 (h <sub>ef</sub> =480mm)	28	480	26	36	100	1.440	80	720	135	536
ResEP-16 + M27 (h <sub>ef</sub> =110mm)	30	110	30	41	120	330	90	165	155	170
ResEP-16 + M27 (h <sub>ef</sub> =540mm)	30	540	30	41	120	1.620	90	810	155	600

### CONSUMPTION

The calculation of the consumption (in volume) is calculated according to the hole diameter, the diameter of the threaded rod and the length of the anchorage.

### DRILLING METHOD

Use suitable tools, such as hammer drills, etc. to drill the hole specific to the substrate (Attention: drill diameter and drill depth!).



Drill hole by using the hammer function on the drill. Observe specified diameter and drill depth.



Remove dust by brushing and blowing: Concrete (Option 1): Blow-out 2 times (6 bar), Brush 4 times, Blow-out 2 times (6 bar).

### INSTALLATION PARAMETERS

#### Before injection:

Press out the mortar until it has a uniform colour. Discard unmixed mortar (min. 3 complete triggers)! Inject mortar starting at the back of the drilled hole until approx. 2/3 of the drilled hole has been filled.



Push a clean and oil-free anchor rod with slight rotary movements into the back of the drilled hole. Backfill control: Mortar exit at the edge of the borehole. During the working time, the anchor rod can be readjusted or mortar defects can be re-injected.



Once set, full load capacity is reached.



*Note: Please see relevant ETA and/or product packaging for detailed installation instructions..*

#### Processing and curing times

Substrate temperature $T_{\text{anchorage substrate}}$	+10°C to +20°C	+21°C to +30°C	+31°C to +40°C
Gel time (working time)	≤ 60 min	≤ 45 min	≤ 25 min
Curing time <sup>1)</sup>	≥ 72 h	≥ 24 h	≥ 24 h

<sup>1)</sup> For anchorages in wet drill holes, the indicated curing times must be doubled (anchorages in drill holes filled with water are not permitted!).

### SUPPLIES

S&P offers system-specific application tools that facilitate and optimize the use of anchoring resins.

- Mixers and extensions
- Brushes
- Blower pumps
- Extrusion tools (AKKU squeezing tools, cartridge presses, etc.)

### CLEANING

#### Tools cleaning

Equipment and tools should be cleaned immediately after use with S&P Cleaner. Cured material can only be removed by mechanical means.

### SAFETY

#### Special precautions

When fully cured S&P ResEP-16 is physiologically harmless. However, the material can cause skin irritation. Strict measures must be taken to ensure that there is no skin contact. It is recommended to wear protective clothing, safety goggles, rubber gloves and so on during handling and application.

Should skin contact occur, rinse with soap and plenty of water. Should eye contact occur, rinse at once with plenty of water and use an eye washing kit (available in pharmacies) for spread lids. Seek medical advice immediately.

#### Important safety instruction

For detailed information, please consult the current safety data sheet, which you can download at [www.sp-reinforcement.at](http://www.sp-reinforcement.at) or contact us by phone at +43 720 34 61 75.

S&P products are manufactured for industrial use. They must be installed by qualified personnel and competent specialists with appropriate training. Further information on the application can be found in the S&P application instructions as well as in the general basics, respectively in the existing technical references.

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The information and data in this technical data sheet serve to ensure the normal intended use and normal application suitability; the information and data are based on our knowledge and experience. They do not absolve the user from their own responsibility to check the suitability and application method.

The rights to make changes to product specifications are reserved. Furthermore, our general sales and delivery terms apply. The current, most recent product data sheet is valid, and should be requested from us.

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