

# technical datasheet



## Chemset P

Chemset P is a fast curing resin grout and adhesive system. It is based on a high strength polyester supplied in a dual component cartridge complete with self-mixing helical nozzle, which keeps the components separate until dispensed.

Chemset P gives excellent adhesion, good chemical resistance and resistance to thermal cycling. It has excellent thixotropic characteristics making it suitable for overhead use.

### Advantages

- Suitable for Overhead Use
- Short Cure Time
- Chemical Resistance
- Thermal Cycling Resistance
- Cartridges Are Part Usable
- Can be used on Concrete, Blockwork, Brickwork, Concrete Blocks and Stone
- Minimises Waste
- Water Resistant
- Excellent Adhesion - Even to damp surfaces

### Application

- Dowels and Starter Bars
- Foundation Bolts
- Handrails
- Safety Fences
- Wall tiles

### Technical Data

Temperature (°C)	Gel time (minutes)	Minimum curing time before loading (minutes)
5	12-15	140
10	8-12	100
20	5-7	70
30	3-5	50

### Preparation

Pre-cast holes should have roughened sides. All holes should be brushed and blown out. Bars and bolts should be de-greased and free from rust.

### Installation

Insert nozzle into base of hole. Apply pressure to gun and slowly withdraw as the hole fills. Insert stud/bar with a twisting action ensuring that it is fully embedded. Clean uncured material away immediately using solvent. Cured material can only be removed mechanically. Partly used cartridges are re-usable.

### Storage

Keep away from direct sunlight. Store in dry, cool conditions. Avoid temperatures below 10°C and above 25°C.

### Supply

380ml dual concentric cartridge.

Ancillary product: 380 ml Chemset gun, spare nozzles and Blow Pump

### Health and Safety

Refer to the Health and Safety data sheet.

### Approximate No. of Fixings Per Cartridge

Bolt Diameter (mm)	Hole Diameter (mm)	Hole Depth (mm)	380ml
8	10	80	110
10	12	90	60
12	14	110	40
16	18	125	20
20	22	170	9

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## Performance data at standard embedment depth in 25n/mm<sup>2</sup> concrete using grade 8.8 steel

Stud Size	Hole Size (mm)	Hole Depth (mm)	Characteristic Load (kn)	Recommended Load (kn)	Edge Distance (mm)	Spacing (mm)	Min. Concrete Depth (mm)
M8	10	80	13.2	4.4	120	80	110
M10	12	90	23.7	7.9	135	90	120
M12	14	110	24.6	8.2	165	110	140
M16	18	125	37.8	12.6	190	125	170
M20	22	170	53.5	18.2	255	170	230

### Reduction Factors for Edge Spacing Distances

The full characteristic edge and spacing distances shown in the table below are the minimum allowable for the quoted information. Where these dimensions are not achievable then the appropriate reduction factor/factors from the following tables must be applied.

EDGE mm	Edge Distance in Concrete						Shear Edge Reduction Factors					
	M8	M10	M12	M16	M20	M24	M8	M10	M12	M16	M20	M24
50	0.77						0.50					
60	0.85	0.80					0.60	0.50				
70	0.92	0.87	0.78				0.70	0.58	0.50			
80	1.00	0.93	0.84				0.80	0.66	0.57			
90		1.00	0.89	0.82			0.90	0.75	0.64	0.56		
100			0.95	0.86	0.80		1.00	0.83	0.71	0.62	0.54	
110			1.00	0.91	0.84	0.77		0.92	0.78	0.69	0.61	0.50
130				1.00	0.92	0.83		1.00	0.92	0.81	0.69	0.59
150					1.00	0.90			1.00	0.94	0.81	0.68
170						0.97				1.00	0.94	0.77
190						1.00					1.00	0.86
210												0.95
240												1.00

### Spacing in Concrete

SPACING mm	Tensile & Shear Edge Reduction Factors					
	M8	M10	M12	M16	M20	M24
50	0.80					
60	0.84	0.80				
70	0.88	0.83	0.80			
80	0.92	0.87	0.83			
90	0.96	0.91	0.86	0.81		
100	1.00	0.93	0.88	0.84	0.80	
110		0.97	0.91	0.87	0.82	0.79
130		1.00	0.96	0.91	0.86	0.82
150			1.00	0.95	0.90	0.85
170				1.00	0.94	0.88
190					0.98	0.92
210					1.00	0.95
240						1.00

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## Ultima

### Description

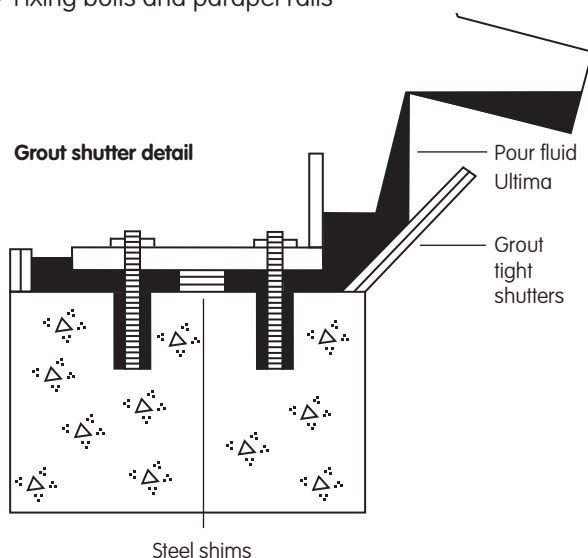
Ultima is a non-shrink, cementitious grout consisting of modified special cements and binders combined with admixtures. It is used for general purpose grouting in thicknesses from 10mm to 100mm. Recommended applications include stanchion base plates, bolt pockets and void filling. Can be bulked out for wider gaps.

### Advantages

- Non-shrink
- Simply add water
- Used at flowable or trowellable consistency
- Chloride free
- Can be used up to 100mm thick
- Positive expansion during setting

### Applications

- Bolt pockets
- Void filling
- Stanchion base plates
- Fixing bolts and parapet rails



### Specified Thickness Range

For greater thickness than 100mm the use of 2-6mm washed and dried pea gravel or limestone aggregate should be added at the ratio 1 part Ultima to 1 part aggregate.

### Installation

#### Mixing instructions

Ultima should be mixed using water which complies with BS 3148 (as for concrete). Mix in a suitable container using either an electric (1kw) or pneumatic power tool. Larger amounts can be mixed in a forced action paddle mixer.

### Mixing

The following water additions should be used depending on the required consistency

- Flowable 4.4 litres/20kg bag

1-2 bags of material should be slowly added to the measured quantity of water whilst mixing. Mix for 3-5 minutes. Allow to stand for 1 minute before use. Do not mix more than can be used in 30 minutes.

### Preparation

Ensure that all surfaces with which the grout will come into contact are clean and dust free. Ideally, concrete substrates should be thoroughly soaked for several hours prior to the grout being applied in order to reduce suction.

### Application

Ultima can be applied normally at temperatures between 5°C and 35°C.

Being cement based, good concreting practice with regard to placing at low and high temperatures should be observed. For machine base plate grouting, ensure that all bolt pockets are fixed prior to grouting between substrate and base.

Continuous grout flow is essential. Sufficient material must be available to ensure continuity of the operation. Pouring should be from one side to the base plate to eliminate the entrapment of air. The pouring side should be raised by means of a hopper or grout box to maintain a minimum 150mm head of grout at all times.

For larger applications Ultima can be placed by means of pumping. The use of heavy-duty diaphragm pump is suitable for this purpose.

# Ultima (cont)

## Technical Data

### Typical properties @ 4.4 litres/20kg (Flowable Consistency)

Compressive strength @ 20°C (N/mm <sup>2</sup> ) BS 1881 Part 116: 1983	1 day	15.0
	5 day	37.0
	7 day	40.0
	28 days	60.0
Pourable Life @ 20°C	30 mins	
Setting times	Initial set:	260mins
	Final set:	320mins
Free Expansion (%)	0.90	

## Flow Characteristics

A typical flow-channel figure would be in the range  
500mm - 700mm

## Quality Control

Ultima is factory blended tested and packaged to quality control procedures in accordance with BS EN ISO9001

## Supply

Each grout is supplied in 20kg sacks

## Yield

The addition of 4.4 litres of water will yield 12.2 litres at a pourable consistency

## Storage

In cool, dry areas clear of the ground

## Health and safety

Being alkaline in nature suitable precautions should be taken. Refer to the Health and Safety data sheet.

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