

Technical information for “tuffset[®] G” single solution system mortar

Steintec[®] tuffset[®] G is a revolutionary high performance, pure hydraulically bonding mortar.

Exceptional early strength gain and outstanding all-round performance put tuffset[®] G ahead of alternative products such as epoxy mortar and resin-based repair products in terms of economy, ease of use and even ultimate performance.

Advantages:

Ease of use – tuffset[®] G is a pure hydraulic mortar, there are no chemical additives, no gauging liquids, just add water and mix whatever quantity is required, however small.

Ease of use – tuffset[®] G is a “single product” solution. Emergency works and night repairs under poor lighting benefit from “one bag” methodology.

Ease of use – a realistic working life allows for mixing and use of reasonable quantities on site, resulting in reduced wastage and more productive labour.

Ease of use – with no chemical admixtures, no polymers or resin binders, tuffset[®] G is easy to clean and leaves no lasting stains. This is an essential requirement for modular pavement construction.

Ease of use – water is all you need; water is the only additive, water is all that is needed for cleaning.

Health & Safety – reduced exotherm and absence of chemical admixtures reduces risks to operatives.

Economy – tuffset[®] G is an affordable solution, as never before possible for a rapid strength gain mortar.

Performance – designed for the installation and repair of modular paving, sufficient strength gain for full traffic loading is typically reached in 3 hours or less.

Performance – The most demanding requirement for adhesion bond in British Standards for pavement construction is 2 N/mm². tuffset[®] G achieves consistently more than 3 N/mm². Adhesion bond is a key performance criterion for the successful repair and early trafficking of modular paving.

Performance – Despite such impressive early strength gain, final strength is similar to standard mortar and stiffness modulus is similar to the other products in the Steintec range of pavement mortars.

Performance – BS7533 compliant – low elastic modulus, high adhesion bond and all performance criteria demanded by British Standards are fully complied with by tuffset[®] G

tuffset[®] G in use:

Bedding mortar – mix one bag of tuffset[®] G with 2 bags of Steintec standard bedding aggregate blend to produce an easy to use, traditional granolithic pavement bedding mortar.

Bonding mortar – just add water to tuffset[®] G to produce a high adhesion slurry paste.

Jointing mortar - just add water to tuffset[®] G to produce a highly plastic, free-flowing jointing grout.

Emergency concrete repair - mix one bag of tuffset[®] G with one bag of Steintec standard bedding aggregate blend to produce a concrete repair having stiffness modulus, compressive and flexural strength compatible with pavement quality concrete C32/40

Early strength gain:

Bedding mortar - 1 part tuffset[®] G mixed with 2 parts aggregate at 20°C:

Compressive strength after 1 hour 15 N/mm²

Compressive strength after 2 hours 19 N/mm²

Compressive strength after 3 hours 20 N/mm²

Compressive strength after 4 hours 30 N/mm²

Jointing mortar - tuffset® G used as a slurry grout at 20°C:

Compressive strength after 1 hour 17 N/mm²
Compressive strength after 2 hours 23 N/mm²
Compressive strength after 3 hours 24 N/mm²
Compressive strength after 4 hours 26 N/mm²
Compressive strength after 1 day 40 N/mm²

Concrete repair - 1 part tuffset® G mixed with 1 part aggregate at 20°C:

Compressive strength after 1 hour 27 N/mm²
Compressive strength after 2 hours 34 N/mm²
Compressive strength after 3 hours 37 N/mm²
Compressive strength after 4 hours 40 N/mm²

Cold weather working – jointing grout tested at only 3°C

Initial setting time is retarded but after 3 hours the curing process accelerates rapidly:
Compressive strength after 4 hours 19 N/mm²
Compressive strength after 6 hours 23 N/mm²

Design strength & compliance with Standards:

28 day laboratory results, in relation to the latest British Standards are as follows:-

For use as bedding mortar, 1 part tuffset® G mixed with 2 parts aggregate):

Compressive strength >39 N/mm² (requirement = 35 N/mm² EN1015-11)
Flexural strength > 7 N/mm² (requirement = 4.0 N/mm² EN1015-11)
Adhesion strength > 1 N/mm² (requirement = 1.0 N/mm² EN1015-12)
Modulus of Elasticity 16,000 - 17,000 (requirement 14,500 – 21,500 N/mm² EN13412)
Shrinkage 0.1% (requirement = 0.1% EN445)

tuffset® G used as priming mortar (bedding mortar together with a layer of liquid tuffset® G applied):

Adhesion strength > 3.1 N/mm² (requirement = 2.0 N/mm² EN1015-12)

tuffset® G alone used as a slurry grout jointing mortar:

Compressive strength >58 N/mm² (requirement = 45 N/mm² EN1015-11)
Bending strength > 9 N/mm² (requirement = 7.5 N/mm² EN1015-11)
Adhesion strength > 3.1 N/mm² (requirement = 1.5 N/mm² EN1015-12)
Modulus of Elasticity 22,000 - 24,000 (requirement 16,000 - 24,000 N/mm² EN13412)
Shrinkage 0.1% (requirement = 0.1% EN445)

SteinTec® mortars are resistant to frost and anti-freezing chemicals. SteinTec tuffset® G complies with or exceeds the performance requirements of BS7533-7 & BS7533-12 for the rigid construction of modular pavements

SteinTec tuffset® G is supplied as a pre-mixed dry product packed in moisture resistant bags. Storage life 6 months in dry conditions (mortar can last longer if stored in moisture free conditions, product found to be in a dry powder form is fit for use)

tuffset® G is especially suited for "difficult" tasks such as replacing damaged joint mortar, infilling of recessed manhole covers and where very early trafficking is a requirement.

SteinTec tuffset® G is available in 3 standard colours: Natural Grey; Mid Grey and Dark Grey

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