



MAXI-CRETE 20 & 40

Flexible Repairs in Concrete

Description

Maxi-Crete is BBA HAPAS approved. It is a unique hot applied, resin based, flexible material especially designed to repair cracks, spalls, pot holes, failed joints, thin bond repairs and most types of defects in concrete pavements to any depth and width. It is the ideal repair for aircraft pavements and major highways and is a fast, very cost effective treatment that reduces the need for full depth repairs.

Maxi-Crete is a grey coloured, pre-mixed blend of resins, polymers and selected aggregates. It is uniquely designed to extend and compress with the expansion and contraction of the pavement. There is no need to reform joints through the finished repair. Due to the special formulated blend, Maxi-Crete produces an impervious, impact resistant, load bearing, highly flexible repair that will withstand vehicle traffic, aircraft movements and varying climate conditions. In most cases Maxi-Crete can accept vehicle and aircraft traffic within 60 minutes of application. Used extensively on most of the UK's international airports, motorways and military airfields, Maxi-Crete will limit the damaging effects of water ingress and improve the riding quality of the concrete surface. The system is laid at a nominal depth of 20mm for highway applications and 40mm for airfield applications in lifts of 20mm until flush with the adjacent surface. Should the depth of repair exceed 40mm Maxi-Crete 40 should be considered as an infill material in combination with Maxi-Crete 20.

Application

- Industrial Hardstandings
- All Airfield Pavements
- Roads and Highways
- Surface Car Parks

Benefits

- BBA HAPAS approved
- Hard wearing repairs
- Apply any time of year
- Minimal traffic disruption
- Tailor-made to fit all defects
- Concrete colour
- High friction finish
- Rapid curing
- High performance

Installation

Maxi-Crete 20 grade is used for all defects <40mm and is the grade most suitable for use on airfields.

Maxi-Crete 40 (harder grade) should be considered in combination with Maxi-Crete 20 where the depth of repair >40mm.

Technical Specification

	MC40 Grade	MC20 Grade
APPLICATION TEMP RANGE	-5°C to 30°C	-5°C to 30°C
SPECIFIC GRAVITY	2.2 approx.	1.8 approx.
SOFTENING POINT	95°C (min) ASTM D36	95°C (min) ASTM D36
FLOW TEST 5hrs @ 80°C	4mm (max) ASTM D3407/BS2499	3mm (max) ASTM D3407/BS2499
EXTENSION TEST @1mm/min @25°C	ASTM D5329	ASTM D5329
Newton Force Extension	650N (max) 40% (min)	650N (max) 55% (min)
PENETRATION TEST @ 25°C	4mm (max)	4mm (max)
SLUMP TEST (cone) 3hrs@70°C	5% (max) BS3262 Part 1	5% (max) BS3262 Part 1
COMPRESSION RESISTANCE 10mm/min@23°C @30% compression	5500 Newton load (min)	3500 Newton load (min)
WHEEL TRACKING @60°C	3.5mm/hr (max)	2.5mm/hr (max)
MAX RUT DEPTH	4.2mm	5mm
MAX. SAFE HEATING TEMP.	220°C	220°C
APPLICATION TEMP.	180°C to 210°C	180°C to 210°C
DE-ICING FLUIDS	Resistant	Resistant

WEATHER CONDITIONS

Installation of the material shall only be carried out at a surface temperature >-5°C. Below freezing temperatures extra care must be taken with preparation and when applying primer to the surface.

PREPARATION OF THE SURFACE

1. Using suitable equipment saw cut around the area to be treated to the required depth. Take care to eliminate micro-cracking to the surrounding concrete. Remove all loose and broken concrete by milling or breaking with light duty breakers.



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Installation continued...

The excavation must be cleaned thoroughly and on all air-field pavements this should be by grit blasting. Dry the area using hot compressed air and ensure no dust deposits remain prior to applying Crete-Prime primer. The primed area must cure for 15 minutes. Tape the edges of the repair to ensure the finished repair is left free of any excess material.

SYSTEM INSTALLATION PROCEDURE

It is advisable to begin with an empty mixer but sometimes this is not possible. Below are guidelines to alleviate overheating and prevent the deterioration or separation of the material:

Starting the mixer with material remaining from the previous shift:

- Turn on the donkey engine and gas, set the temperature to a maximum of 140°C
- As soon as the material starts to melt engage the paddles
- Switch the rotation of the paddles from forward to reverse a number of times until the paddles become completely free and can fully turn. Try not to stall the donkey engine whilst trying to rotate the paddles
- Once the paddles are turning freely, adjust the thermostat to 190 °C and load the mixer with a further 5-10 new Maxi-Crete bags depending on how much material is in the mixer already
- Continue the mixing process making sure the paddles are turning freely and the donkey engine does not stall
- Add more bags of Maxi-Crete as required making sure that the paddles are turning freely, allow the material to mix thoroughly for at least 30-40 minutes at working temperature before carrying out the Maxi-Crete repairs

Starting with an empty mixer:

- Turn on the donkey engine and gas, allow the mixer temperature to rise to 50-60 °C
- Place 5-10 bags of Maxi-Crete into the mixer and engage the paddles, make sure the paddles can rotate freely in forward and reverse and the donkey engine does not stall
- Set the thermostat to 140 °C and allowing the material to mix and melt, add more bags of Maxi-Crete until the mixer is fully charged
- Turn up the thermostat to 190 °C and allow to mix until temperature is reached
- Allow the material to mix thoroughly for at least 30-40 minutes before carrying out the Maxi-Crete repairs

Note: a) The length of time required for the Maxi-Crete to thoroughly mix will depend on the size of the mixer and the amount of material to be used during the shift.
 b) The heated material must be used within 2 hours.

When using Maxi-Crete 20 the pre-heated material is poured into the repair until level with the surrounding surface. A hot iron is used to level off the Maxi-Crete to the finished level.

When using Maxi-Crete 40 the pre-heated material is poured into the repair in layers approximately 20mm thick. Continue applying layers until the material is level with the surrounding surface. Each layer must be allowed to cool to approximately 60°C before additional layers are applied.

When using both grades of Maxi-Crete the application of Maxi-Crete 20 must be applied to the Maxi-Crete 40 base material before its temperature falls below 25°C. Should the temperature fall below 25°C the recess and Maxi-Crete 40 surface must be carefully re-heated using a gas and air lance.

While the final layer of Maxi-Crete is still in a molten state at $\geq 75^\circ\text{C}$, apply a dressing of dry, hot (140°C) Chinese Bauxite aggregate or high PSV granite. Allow the repair to cool for approximately 40-60 minutes.

During the curing period no disturbance or trafficking of the repaired area should be permitted. Prior to opening to traffic at the end of the curing period, any excess materials or detritus shall be removed by sweeping or other suitable means.

Storage

Maxi-Crete is supplied in nominal 25kg bags. The aggregates are delivered to site in 25kg bags. Crete-Prime primer is supplied in 5L or 25L cans.

Shelf life is 2 years if stored in cool dry conditions and protected from inclement weather.

Warranty

The Company warrants that the materials meet stated specifications at the time of dispatch from the factory. Techniques used for the preparation of the repair prior to application are beyond the Company's control, as are the use and application of the materials. The Company shall not be responsible for improperly applied or misused materials. There shall be no other warranties expressed or implied.

