

Ucrete® DP

Defined Profile Heavy Duty Polyurethane Screed

DESCRIPTION

Ucrete DP is unique HD Polyurethane resin technology with exceptional resistance to aggressive chemicals, heavy impact and temperatures up to 120°C.

Ucrete DP is a family of products with defined surface profiles suitable for applications in wet and dry process environments.

The system offers a uniformity of surface texture with enhanced aesthetics, with a gloss or matt finish, so providing a safe and attractive working environment.

It is dense and impervious, providing the ideal floor finish for applications in the food and beverage, pharmaceutical and chemical industries and wherever a robust long-lived floor is required.

With three defined surface profiles and three thickness specifications available, **Ucrete DP** is designed to meet a wide range of service and temperature requirements.

Ucrete Industrial Flooring has been widely used throughout industry for more than 40 years, many of the older floors are still in service. A detailed project reference list is available upon request.

An antistatic version of **Ucrete DP10** and **Ucrete DP20** is available, see separate data sheet.

COLOURS

Ucrete DP is available in eight standard colours:

Red	Yellow	Green	Orange
Grey	Cream	Blue	Green/Brown

All colours are available with a matt or gloss finish

Ucrete floor systems have been formulated to provide the very highest chemical and heat resistance. As a direct result some yellowing of the installed floor will occur in areas of direct UV exposure. This is most apparent in lighter colours.

PERFORMANCE DATA

AIR QUALITY

Ucrete has been awarded the Indoor Air Comfort Gold Label following extensive VOC emission chamber testing and auditing of quality management and production control procedures.

This demonstrates that Ucrete is an extremely clean product without any volatile compounds that might taint foodstuff or affect the well-being of personnel. All Ucrete grades give very low emissions and conform to all the emissions requirements for indoor flooring systems in Europe including AgBB in Germany, Afsset in France, where they are rated A+ for VOC emissions (the cleanest rating), and M1 in Finland.

For further information please contact your local Master Builders Solutions representative.

SLIP RESISTANCE

The **Ucrete DP** surface profiles have coefficient of friction as determined to EN13038 Part 4 using the 4S rubber on the wet floor as follows:

Ucrete DP10	45 - 50
Ucrete DP20	45 - 55
Ucrete DP30	50 - 60

The **Ucrete DP** surface profiles conform to DIN51130 as follows:

Ucrete DP10	R11 -
Ucrete DP20	R12 - or R13 V4*
Ucrete DP30	R13 V8

*Depending upon specification

The extremely robust aggregates used to provide the texture of **Ucrete DP20** and **Ucrete DP30** are designed to maintain optimum slip resistance for many years. Where there is heavy hard wheeled traffic it is recommended that **Ucrete DP30** is used.

Optimum slip resistance can only be maintained with regular cleaning.

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TEMPERATURE RESISTANCE

The **Ucrete DP** resins do not start to soften until temperatures above 130°C are exceeded. 9mm specifications are fully serviceable up to 120°C and suitable for freezer temperatures down to -40°C. Correctly installed **Ucrete DP** at 9mm thickness can withstand regular and routine discharges of boiling water, hot oils and fats.

NON-TAINTING

Ucrete DP systems are solvent free and non-tainting from the end of mixing, as tested by Campden Technology Ltd.

IMPACT RESISTANCE

With high mechanical strengths and a low elastic modulus, **Ucrete DP** is very resilient and able to withstand severe impact loads. While no material is indestructible and surface chipping may occur, brittle modes of failure resulting in cracking and disbondment are unknown with Ucrete floors.

TYPICAL PROPERTIES*

Density	2000 - 2090 kg/m ³
Compressive strength (EN13892-2)	48 - 54 MPa
Tensile strength (BS6319 Part 7)	5 - 7 MPa
Flexural strength (EN13892-2)	12 - 14 MPa
Compressive modulus (BS 6319:Part 6)	3250 - 5000 MPa
Adhesive strength to concrete (EN13892-8)	concrete failure
Coefficient of thermal expansion (ASTM C531:Part 4.05)	4 x 10 ⁻⁵ °C ⁻¹
Fire Testing (EN13501: Part 1)	B _F L – S ₁

Note: Samples cured for 28 days at 20°C

CHEMICAL RESISTANCE

Ucrete DP offers exceptional resistance to a wide range of chemical aggressors. For example, Ucrete is resistant to the following commonly encountered chemicals:

Acetic Acid, 50%: As spirit vinegar widely used in the food industry, indicative of resistance to vinegar, sauces, etc.

Concentrated Lactic Acid @ 60°C: Indicative of resistance to milk and dairy products.

Oleic Acid, 100% @ 60°C: Representative of the organic acids formed by oxidation of vegetable and animal fats widely encountered in the food industry.

Concentrated Citric Acid: As found in citrus fruits and representative of the wider range of fruit acids which can rapidly degrade other resin floors.

Methanol, 100%: Representative of alcohols and the wider range of solvents used in the pharmaceutical industry.

Ucrete DP is also resistant to a wide range of mineral oils, salts and inorganic acids, extensive chemical resistance tables are available upon request.

Note: some staining or discolouration may occur with some chemicals, depending upon the nature of the spillage and the standards of housekeeping employed.

PERMEABILITY

Ucrete DP exhibits zero absorption when tested to CP.BM2/67/2.

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SUBSTRATE MOISTURE TOLERANCE

Ucrete Industrial Flooring is extremely tolerant to residual substrate moisture and can be installed directly onto 7 day old concrete, or onto old good quality concretes with high moisture contents without the use of special primers, provided there is a functioning DPM within the structure.

This enables rapid construction programmes to be maintained and facilitates refurbishment work in wet process areas.

Epoxy surface DPMs should not be used as they soften under high temperature conditions and will lead to floor failure.

SPECIFICATION

The **Ucrete DP** system consists of three surface textures, **DP10**, **DP20**, and **DP30**, which can be installed at thicknesses of 4, 6 or 9mm depending upon the service conditions.

The specifier should specify the grade and surface texture required, as **Ucrete DP10**, **Ucrete DP20** or **Ucrete DP30** and the required thickness and whether a gloss or matt finish.

For example:

The floor finish shall be **Ucrete DP10/20/30*** (*select depending upon required texture), from Master Builders Solutions UK Ltd, of 19 Broad Ground Road, Redditch, Worcestershire, B98 8YP, installed at 4/6/9*mm (*select depending on service conditions) with a matt/gloss* (select as required) finish installed in accordance with the manufacturer's instructions.

*A 4mm **Ucrete DP** floor is fully resistant to liquid spillage and discharge up to 70°C. Suitable for freezer temperatures down to -15°C.

*A 6mm **Ucrete DP** floor is fully resistant to liquid spillage and discharge up to 80°C and can be lightly steam cleaned. Suitable for freezer temperatures down to -25°C.

*A 9mm **Ucrete DP** floor is fully resistant to high temperature spillage and discharge up to 120°C and is fully steam cleanable. Suitable for freezer temperatures down to -40°C.

In extreme thermal shock environments, a well-designed substrate of good quality concrete is essential.

SUBSTRATE QUALITY

Concrete substrates should be visibly dry and have a minimum tensile strength of 1.5 MPa.

Refer to the guide 'The Design & Preparation of Substrates for Ucrete Industrial Flooring'

All joints in the substrate concrete subject to movement should be reflected through the Ucrete floor and sealed with a suitable sealant.

APPLICATION CONDITIONS

For best results materials, substrate and air temperature should be in the range 15–25°C. Whilst **Ucrete DP** will cure out effectively over a wide range of temperatures the optimum appearance and profiles are most readily achieved under good site conditions

Low temperatures will retard the setting and can impair the visual appearance of the floor.

High temperatures will shorten the open time and can impair the appearance of the floor.

CURING

Normally **Ucrete DP** floors can be put into service within 24 hours even at 8°C.

CLEANING AND HYGIENE

Ucrete flooring systems are accredited for use in facilities operating HACCP based food safety systems.

Regular cleaning and maintenance will enhance the life and appearance of any floor.

Ucrete DP is cleaned using industry standard cleaning chemicals and equipment. The use of a food industry standard scrubber drier machine is recommended.

Detailed cleaning guidelines are available from your local Master Builders Solutions Construction Chemicals office.

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DISPOSAL

Part 2 containers should be decontaminated with 5% sodium carbonate (washing soda) solution after use and disposed of as building waste in accordance with local regulations.

STORAGE

In covered warehouse conditions, above 5°C and below 30°C and out of direct sunlight. Materials must be raised off the floor and kept dry. Liquid components must be protected from frost.

HEALTH AND SAFETY

In its cured state **Ucrete DP** is physiologically non-hazardous.

For normal flooring applications Ucrete does not require the use of respiratory protective equipment during installation.

Operatives should consult the CoSHH risk assessment and their work instructions.

* Properties listed are based on laboratory controlled tests.

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01040054, 01040055, 01040056	
EN 13813:2002	
Synthetic resin screed material	
Reaction to fire:	B _F L – S ₁
Release of corrosive substances:	NPD
Water permeability:	NPD
Mechanical resistance:	NPD
Wear resistance:	AR0,5
Bond strength:	B>2,0
Impact resistance:	IR>4
Sound insulation:	NPD
Sound absorption:	NPD
Thermal resistance:	NPD
Chemical resistance:	NPD
Electrical resistance:	NPD



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STATEMENT OF RESPONSIBILITY

The technical information and application advice given in this Master Builders Solutions publication are based on the present state of our best scientific and practical knowledge. As the information herein is of a general nature, no assumption can be made as to a product's suitability for a particular use or application and no warranty as to its accuracy, reliability or completeness either expressed or implied is given other than those required by law. The user is responsible for checking the suitability of products for their intended use.

NOTE

Field service where provided does not constitute supervisory responsibility. Suggestions made by Master Builders Solutions either orally or in writing may be followed, modified or rejected by the owner, engineer or contractor since they, and not Master Builders Solutions, are responsible for carrying out procedures appropriate to a specific application.

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