



Concretes for Agricultural Use

Designated concrete

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Designated concretes are quality assured designed concretes that conform to a specification detailed in BS 8500-2: *Concrete - Complementary British Standard to BS EN 206-1 - Part 2: Specification for constituent materials and concrete*.

These concretes have been selected by governmental bodies and industry to be fit for their intended end uses and they can only be supplied by ready-mixed concrete producers who have third-party product conformity certification.

A QSRMC or BSI logo on the delivery ticket provides this confirmation. Purchasers can therefore be confident that the concrete will be delivered as specified and ordered.

Selecting the appropriate concrete

Decide which of the 'typical applications' matches your application and site conditions. For foundations, drainage and low rise building use the associated publication *Concrete simplified ... with designated concretes for housing* for selecting the typical application. Identify the recommended designated concrete.

Measure the prepared location and calculate the volume of concrete required. Slightly over-estimate the volume required as it is annoying to run short and expensive to order a very small volume. Have in mind a 'holiday' job for any surplus concrete, e.g. hardstanding.

Ensure a suitable and safe access for the ready-mixed concrete truck, the largest of which may be up to 10.5m long, 2.5m wide and 3.8m high and weigh 32 tonnes when fully loaded.

If the truck cannot discharge directly into the works, provide transport to move the concrete from the delivery truck to the works, e.g. front shovel, or ask the ready-mixed concrete producer for advice. They may be able to provide a truck that has a pump or conveyor or recommend a company that may supply such equipment.



Concrete truck with built-in conveyor system

A few days prior to requiring the concrete, ask for a quotation. Provide the information given below in 'What to specify'. At this stage you may not know the exact volume of concrete so give an estimate and say that you will confirm the volume the day prior to delivery. Confirm the order and time of delivery the day prior to delivery.

What to specify

Specify the designated concrete, the volume required, the date required and the time when you want the first truck on site. Also specify:

- The nominal maximum aggregate size only if it needs to be different from 20mm (you will get a maximum aggregate size of 20mm if you do not specify a different size). Options, if available, will be 40 or 10mm.
- The slump class as recommended in Table 1.

Inform the producer of the intended method of placing and finishing the concrete.

Typical applications for designated concretes

Typical application	Designated concrete	Recommended slump class	
		Hand Compaction	Vibration Equipment
Livestock floors	RC28/35	S3	S2
Stable floors	RC35/45	S3	S2
Crop store floors	RC28/35	S3	S2
Floors (and walls) for silage	RC30/37 ^{A)}	S3	S2
Sugar beet storage areas	RC32/40 ^{B)}	S3	S2
Workshop floors and floors subject to small-wheeled forklift trucks	RC32/40	S3	S2
Brewers' grain stores	RC35/45	S3	S2
Mushroom sheds	RC32/40	S3	S2
Toppings for floors such as parlours and dairies	RC35/45 ^{C)}	S2	S2
Floors (and walls) for manure and slurry stores	RC30/37 ^{A)}	S3	S2
External yards and roads subject even to occasional de-icing salts	PAV 2	S3	S2

^{A)} This concrete effectively meets the requirements for the C35A concrete specified in BS 8007 Code of practice for the design of concrete structures for retaining aqueous liquids and it meets the requirements for the concrete demanded by the Control of Pollution Regulation 1991.

^{B)} Where the concrete is subject to even occasional de-icing salts, designated concrete PAV 2 is recommended.

^{C)} Take extra care to ensure full compaction of the fresh concrete and proper curing for at least several days.

Health and Safety

Health and safety, BS 8500: Hazard warnings

Where skin is in contact with fresh concrete, skin irritations are likely to occur owing to the alkaline nature of cement. The abrasive effects of sand and aggregate in the concrete can aggravate the condition. Potential effects range from dry skin, irritant contact dermatitis, to - in cases of prolonged exposure - severe burns.

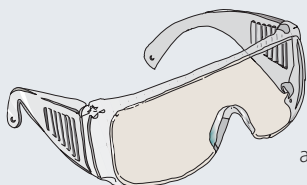
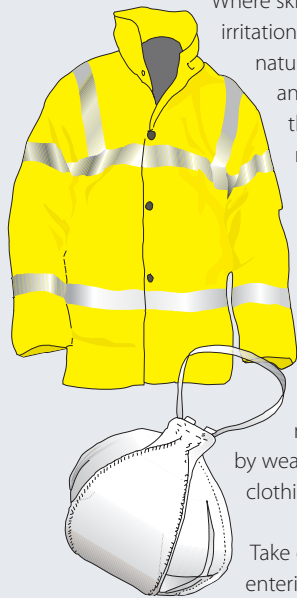
Take precautions to avoid dry cement entering the eyes, mouth and nose when mixing mortar or concrete by wearing suitable protective clothing.

Take care to prevent fresh concrete from entering boots and use working methods that do not require personnel to

kneel in fresh concrete. Unlike heat burns, cement burns might not be felt until some time after contact with fresh concrete, so there might be no warning of damage occurring.

If cement or concrete enters the eye, immediately wash it out thoroughly with

clean water and seek medical treatment without delay. Wash wet concrete off the skin immediately. Barrier creams may be used to supplement protective clothing but are not an alternative means of protection.



Lifting and placing concrete

Ready-mixed concrete is heavy, with a standard barrow load weighing over 100 kg, so lifting/carrying just a small volume may cause physical injury.

It is therefore essential that you follow health and safety regulations in order that you may place, compact and finish the work without straining yourself.

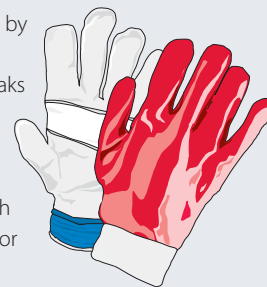
Use of vibrating pokers and equipment

Certain types of plant create a large amount of vibration during use (for example pneumatic hammers, drills, grinders and vibrating pokers).

Prolonged exposure to vibration can cause carpal tunnel syndrome and hand arm vibration syndrome (HAVS).

It is possible to reduce the effects of vibration by selecting plant with vibration dampeners, by using anti-vibration gloves, taking regular breaks and/or by keeping your hands warm in cold weather.

Please seek advice from the manufacturer with regard to the use of this type of equipment. For advice on safe handling of concrete, placing, compaction and curing of concrete, see 'further reading'.



For further reading refer to

- *British Standards Institution*, BS 8500: 2006. Concrete - Complementary British standard to BS EN 206-1, Part 1: Method of specifying and guidance for the specifier; Part 2: Specification for constituent materials and concrete, London, BSI.
- *British Standards Institution*, BS 5502: Part 50, 1993 Buildings and structures for agriculture Part 50: Code of practice for design, construction and use of storage tanks and reception pits for livestock slurry.
- *BRMCA*, 'Do's and Don'ts' brochure ref. BRMCA/02/09, February 2009.
- *The Concrete Society*. Good Concrete Guide 8: Concrete Practice, November 2008, Camberley.



BRMCA is part of the Mineral Products Association, the trade association for the aggregates, asphalt, cement, concrete, lime, mortar and silica sand industries

BRMCA

Gillingham House
38 - 44 Gillingham Street
London SW1V 1HU
Tel +44 (0)20 7963 8000
Fax +44 (0)20 7963 8001
brmca@mineralproducts.org
www.brmca.org.uk

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