

# Slip Resistant Flooring Using Broadcast Aggregates

**Slip resistant flooring is critical to meet safety requirements and create an accident-free environment. Slip hazards can be attributed to a number of causes including type of surface material, degree of wear, maintenance, presence of water or other liquids, type of footwear and slope of the surface.**

**The floor finish is therefore a key factor in achieving the required slip resistance rating.**

Most floor coatings develop an inherent degree of slip resistance depending on the coarseness of the finish. For example, Polyurethane cement products naturally develop higher degrees of slip resistance compared to Epoxy based coatings.

It is important to note however, that a coarse finish does not guarantee a high slip resistance rating. In addition, low to high slip resistance is independent of whether chemical resistance is required, so you must ensure the product and slip resistance solution you choose satisfies the required slip rating.

## SLIP RATINGS

There are 4 types of slip resistance ratings that may be encountered for internal or external floors. You will find products that report results for some, or in many cases all, ratings.

Testing is performed in a laboratory according to test methods detailed in AS4586: 2013 Slip resistance classification of new pedestrian surface materials. The resultant slip ratings are indicative of the coating being applied in accordance with directions in the Technical Data Sheet. Tests are performed on newly coated surfaces and therefore do not take into account wear which can affect the long-term slip resistance of some surfaces.

Below is a summary of the tests and resultant ratings.

Test name	Used for	Rating
Dry floor friction test	Slip resistance of dry surfaces, the results are not applicable for the same surface in the wet condition.	D1/D0
Wet pendulum test	Slip resistance of surfaces when wet.	P0-P5
Wet-barefoot inclining platform test	Slip resistance of surfaces intended for applications which become wet during normal use and are subject to barefoot traffic.	A/B/C
Oil-wet inclining platform test	Slip resistance of surfaces intended for industrial applications where footwear is required.	R10-R13

The dry floor friction test and wet pendulum test can be performed on-site for verification of the slip rating achieved after application and drying, Noroo does not perform this testing, it must be completed by a contracted professional

## WHAT LEVEL OF SLIP RESISTANCE DOES A FLOOR NEED TO MEET?

For guidance and recommendations on the minimum degree of slip resistance required for common applications refer to HB 198:2014 – Guide to the specification and testing of slip resistance of pedestrian surfaces, published by Standards Australia.

The National Construction Code (NCC) also specifies ratings, but for a limited number of applications.

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## USE OF AGGREGATES

In many cases, the coating alone will not provide the required slip resistance. In this case, most commonly, broadcast aggregates are used to develop the necessary degree of slip resistance and meet the required slip resistance rating. In some cases, a coating may already have the slip resistance aggregate incorporated within the product, or the aggregate may be able to be stirred in to the product.

The most common types of broadcast aggregates used in the industry are Silicon dioxide/Silica sand & Aluminium oxide. Selection of the appropriate aggregate will depend on the type of area and industry in which the floor is in service.



### As a guide:

- Silicon dioxide/Silica sand is recommended for general purpose dry applications, medium duty storage areas and loading/unloading bays, it does not have the durability of Aluminium Oxide.
- Aluminium Oxide is recommended for heavy duty areas, including wet processing areas and cold rooms where good durability is required.

Check the usage instructions of the chosen aggregate, all aggregates are not compatible with all coatings and may cause application issues if not used correctly

## DOSAGE RATE

Aggregates can be applied at a range of dosage rates, from lightly broadcast - sparse, to maximum, blinding coverage. The dosage rate affects not only the slip resistance achieved, but also the appearance and cleanability of the floor.

- The more aggregate that is applied, the more difficult the surface is to clean.
- A lighter broadcast of a larger aggregate makes the floor easier to clean, but can still achieve good slip resistance.

## Using Broadcast Aggregates

### THE Q-COAT® ANTI-SLIP GRAINS RANGE

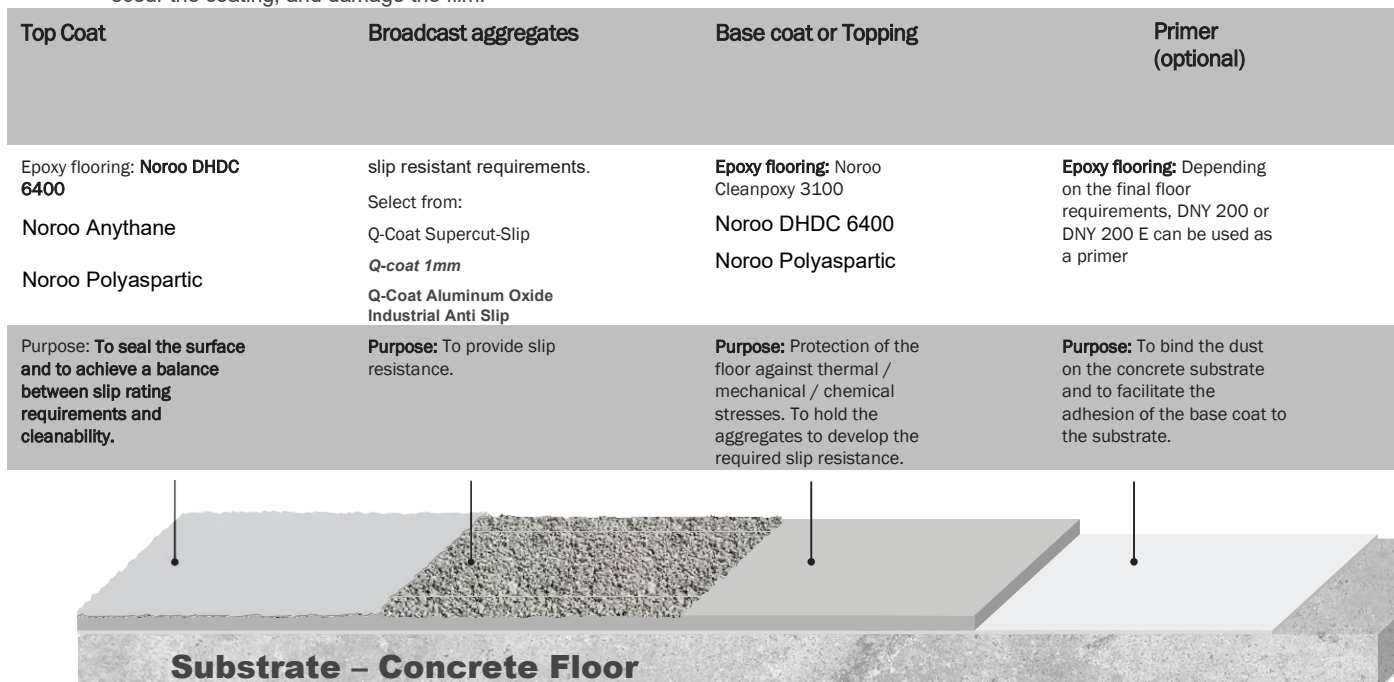
The Q-Coat Anti-Slip Grains range provides slip resistant options for epoxy roll-coats, polyurethane cement systems and tamping into wet concrete.

Name	Technology	Nominal size	Colour	Primary use	Recommended dosage (broadcast)
Q-Coat Supercut	Graded #30/36 silica sand	0.25 - 0.5mm	Natural sand	For use with Noroo epoxy roll-coats.	Light effect: 50 to 100g/m <sup>2</sup> Fully blinding: up to 500g/m <sup>2</sup>
Q-coat 1mm	Graded #16/30 silica sand	0.5 – 1.0mm	Natural sand	For use with Noroo epoxy roll-coats and polyurethane cement flooring systems.	Epoxy roll-coats: Light effect: 50 to 100g/m <sup>2</sup> Fully blinding: up to 500g/m <sup>2</sup> Polyurethane cement: 3 to 4kg/m <sup>2</sup>
Q-Coat Aluminum Oxide Industrial Anti Slip	>99% graded #16 Aluminium Oxide	0.5 – 1.0mm	White	For use with Noroo polyurethane cement systems. Ideal for wet zones and floors that require hot water or steam cleaning.	2 to 3kg/m <sup>2</sup>

Note – when applying anti-slip grains to epoxy products it becomes possible to achieve a slip rating D1 dry floor friction & a P5 wet pendulum rating.

### APPLICATION - BROADCAST

Q-Coat Anti-Slip Grains are broadcast on to the almost wet surface of the base coat then sealed with a top coat. The grains should be allowed to fall vertically on to the floor coating rather than be thrown across the surface, as this may cause ridges or scour the coating, and damage the film.



Note - diagram is for illustrative purposes only, final texture and appearance of the floor may differ. \*Aggregates can not be applied directly on to , DNY 200 or DNY 200 E . They must be cured first, then Noroo DHDC 6400 applied on top followed by the broadcast grains.