

TECHNICAL DATA SHEET	DESCRIPTION	DATE
TDS12	SCREED STANDARDS	SEPTEMBER 2025

TECHNICAL DATA SHEET

South African Standard Code of Practice SANS 10155:2009 “Accuracy in Buildings.” ‘Permissible Deviations in Floors and Ceilings’

Permissible Deviation, at any point under a 3m straight-edge placed level in any direction for a Class 1 screed, allows for a maximum deviation of 3mm. In other words, 3mm under a 3m straight edge in any one direction.

A suggested wording to go into a Bill of Quantity could read as follows:

“Quality products should be fitted to adequately prepared subfloors, which comply to SANS 10155: 2009 Code of Practise, wherein it states that the PD (Permissible Deviation) at any point under a 3m straight edge placed level in any direction is no greater than a maximum of 3mm (thus maximizing product life and ease of maintenance).”

Note:

It is interesting to note that in SANS 10070: 2012 The installation of resilient thermoplastic and similar flexible floor covering materials also details the correct procedure and Permissible

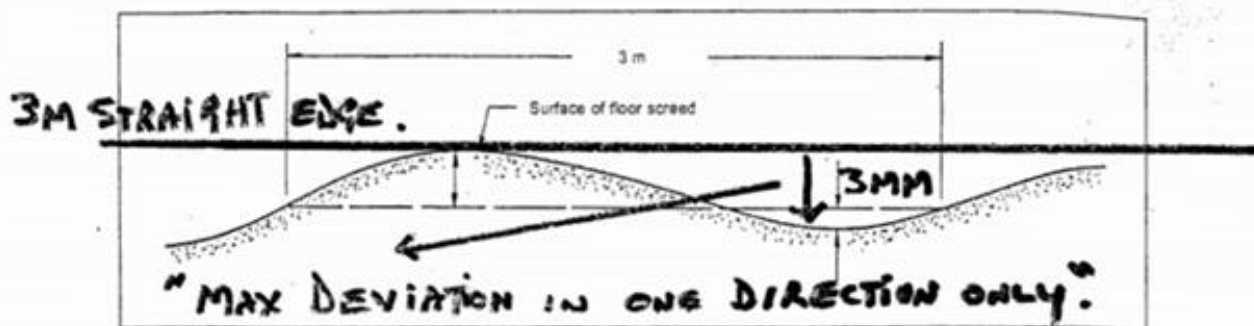


Figure 2: Deviation from a straight line 3 m long joining two points on the surface (Exaggerated vertical scale)

Deviations for screed levelness.

Surface finish

Screeds

The surface of the screed should be finished according to the type of wearing surface or flooring that is to be laid. For mastic asphalt, wood block and strip, and some textile floor coverings, a non-slip finish is appropriate, while thin sheet and tile floor coverings require a smoother surface.

If a designer specifies the use of a thin sheet or tile floor, then the use of a smoothing compound needs to be specified in certain circumstances.



Toppings

The surface of the topping should be finished to meet the abrasion requirements of the facility.

Specifying tolerances in levels and surface regularity

When specifying departure from datum and surface regularity, considering the types and thicknesses of the flooring and the screed, or topping, the designer needs to consider:

- the finished floor surface.
- the screed/topping/direct finished slab surface.
- the base slab to receive a screed or topping.

Some variations in surface regularity can be allowed without detriment to the satisfactory application of the flooring.

The permissible limits associated with surface regularity and departure from datum depend on many factors. In general, the thinner the applied flooring the higher the class of surface regularity required.

Maximum permissible departure of the level of the screed or topping surface from datum and the required class of surface regularity should be included in the job specifications.

Deviations from datum level

Permissible deviation from datum level depends on the area of the floor and its intended use.

For large areas for normal purposes ± 15 mm from datum should be satisfactory. Greater accuracy may be required in small rooms, along the line of partition walls, in the vicinity of door openings and where specialized equipment is to be installed directly on the floor and in the case of high tolerance industrial floors.

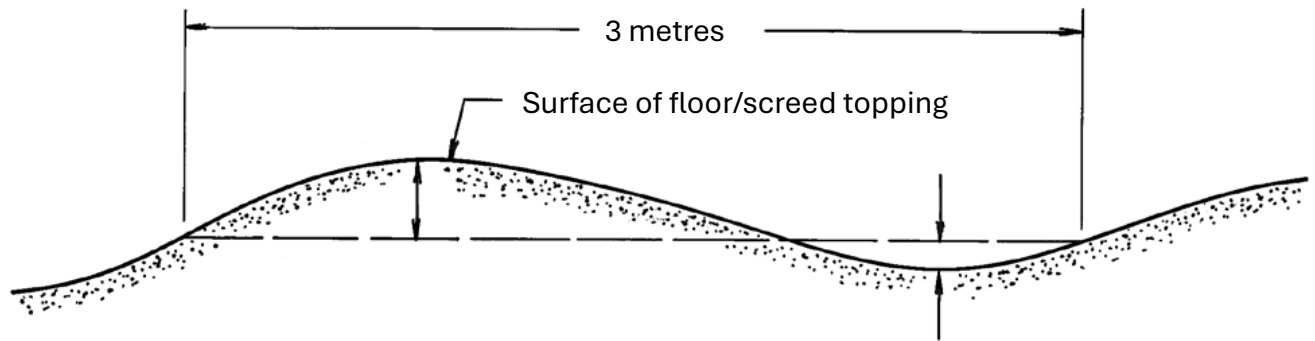
Surface regularity

This is described as the maximum permissible deviation from a straight line 3 m long joining two points on the surface.

The class of local surface regularity of a finish should be selected from those given in Table 1 according to the use of the floor. In making this selection, account should be taken of the type and thickness of the surface or flooring to be applied and the standard of surface regularity required of the finished floor. The highest standard (Class 1) should be used where a thin flooring is to be applied and where the minimum irregularity is required of the finished floor, e.g., for a television studio. In cases where a very flat floor finish is required, Class 1 using the straight-edge method, may not be adequate and other methods may have to be used.

Conversely, the lowest type of wearing surface is applied where the regularity of the finished floor is not a significant factor. Insistence on higher standards of surface regularity than are necessary will result in higher costs. In service, the suitability of a floor in terms of surface regularity is governed by its radius of curvature and changes in height over short distances. Specialist test equipment is now available with which to assess these factors, and new specifications can be used to control them.

Although this new test equipment is more complex to use than the straightedge, it is less laborious on large floor areas.



The architect/designer should specify the maximum permitted abrupt change in level across joints in direct finished slabs and screeds and toppings considering the type and thickness of the flooring to be applied. For some types of floorings, a maximum of 2 mm would be acceptable, considering the surface preparation necessary to receive the flooring. For other types of flooring, especially thin floorings, or where no flooring is to be applied, it would be appropriate not to have any changes in level across joints. Readings should be taken as soon as possible after completion of the screed or topping.

Specifying the strength of screeds and toppings

Screeds

The strength of a hardened sand-cement screed can be tested with the “BRE screed tester.” Specifying an acceptance criterion before the start of the job is advisable as this could prevent disputes after completion.

The “BRE screed tester” consists essentially of a mass which is dropped on a standard foot piece which is placed on the surface of the screed.

The indentation resulting from four impacts of the mass is measured and is an index of screed strength.

Toppings

Concrete for a topping should have a characteristic 28-day compressive strength appropriate to the desired abrasion resistance, or designed compressive or flexural strength, but of at least 20 MPa where abrasion is not a consideration, 28-35MPa for areas requiring a harder substrate. The coarse aggregate used should be of nominal size 6,7 mm for monolithic toppings of nominal thickness 25 mm and of nominal size not exceeding 9,5 mm for separate bonded toppings of nominal thickness 30 mm. If the nominal thickness of the topping exceeds 40 mm, however, the nominal size of the coarse aggregate should be increased to one-quarter of the thickness of the topping, subject to a maximum of 19 mm.