TARMAC
A CRH COMPANY

Site Guide No.8

Technical information

Point loading

Introduction

This Site Guide should be considered when determining point loads applied to a screeded flooring system.

Information

A load that is placed on a screeded floor is supported by the floor covering, the screed, and the insulation layer below the screed. These layers spread the point load across the floor.

If the load used on the floor is disproportionate this can cause the layer of insulation to compress and may also result in the screed cracking under the load. This is due to the compressive strength of the insulation not being adequate to support the load.

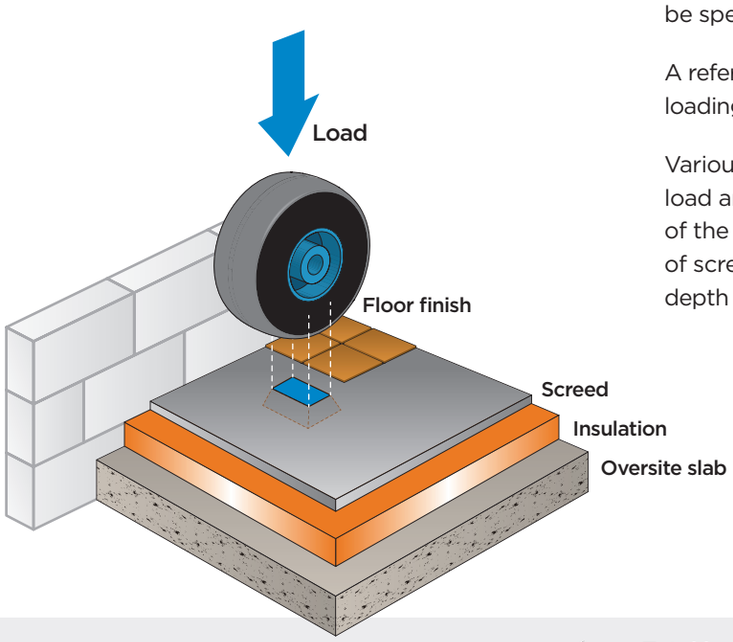


Illustration of a typical floating screed flooring system.

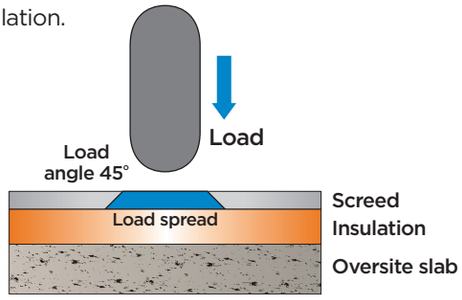
This type of point load usually occurs in buildings where there are high level access platforms, heavy equipment, cherry pickers, motor vehicles and mobile elevated work. Consideration must be given for pre and post construction and the buildings intended use.

Insulation products are available with various degrees of compressive strength to suit different loads. It is imperative that the compressibility is considered when determining the insulation requirement.

The calculations need to be carried out by a qualified structural engineer, as they would be able to determine the force transmitted through the screeded flooring system and strength and types of materials to be specified.

A reference to Tarmac screeds and their indicative point loading capabilities can be found in the table overleaf.

Various factors that can affect the calculation of the load are; the point load, weight of the load, the area of the load in contact with the floor, depth and type of screed, the angle of the load through the floor and depth of insulation.



$$\text{Load} = \left(\frac{\text{Total load}}{\text{No of contact points}} \right)$$

All calculations should be carried out by a qualified structural engineer.

For more details contact:
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Calculations:

BS EN 13813 Compressive Strength Class of Screed	Minimum Compressive Strength of screed at 28 days (N/mm2)	Point loading, based on Min. Comp* (KN/m2)	Point loading, based on Min. Comp* (Kg/mm2)
C12	12.0	12,000	1.22
C16	16.0	16,000	1.63
C20	20.0	20,000	2.04
C25	25.0	25,000	2.55
C30	30.0	30,000	3.06
C35	35.0	35,000	3.57
C40	40.0	40,000	4.08

*Estimated equivalent calculated from the minimum compressive strength performance of the screed alone. These are indicative and may be subject to change. All calculations should be carried out by a qualified structural engineer and include appropriate considerations for the total installation specification of the final floor design.

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