



The challenge

In schools and sports halls, the impact resistance of construction materials is an important matter. As well as highly effective sound absorption, materials need to offer resistance to the impact of balls and the rough treatment of students.

In certain application areas the use of Rockfon products on ceilings and walls requires assessment of their resistance to mechanical impact. In Germany the DIN 18032 Part 3 standard was developed to assess ball impact resistance of wall and ceiling panels in sports facilities. Wall elements are classified as "Ball Impact Resistant" if they can withstand the impacts from a hand ball (54 times at 23.5m/s impact speed) as well as a hockey ball

(12 times at 18.0m/s). They would be classified as "Limited Ball Impact Resistant" if they are only subjected to and meet the hand ball resistance requirements.

Impact resistance may also be relevant to assess for ceiling systems therefore the European Norm for suspended ceilings, EN 13964, has adopted the principle of testing impact resistance from DIN 18032-3. For suspended ceilings, three classes of impact resistance 1A, 2A and 3A are defined depending on the speed of impact of a handball (36 times). Speed of impact for suspended ceiling systems is reduced relative to wall elements due to the nature of the installation and the inevitable force of gravity.

Our contribution to performance

Rockfon ceilings are also available with impact resistant surfaces. In products like these, the surface is strengthened by the use of continuous fibres that are able

to withstand high compressive forces. The amount of continuous fibres used determines the impact resistance level.

Recommendations

The impact resistance of Boxer and Samson ceilings fulfills the demand in all three classes of impact resistance according to EN 13964 Section D.



Not everybody can be a ceiling expert. So customers need to be able to trust the declared performance of ceiling suppliers and that is exactly the purpose of CE marking. The European Committee for Standardization (CEN) introduced the EN 13964 norm for suspended ceilings which has been mandatory since July 1, 2007. The norm aims to make it easier to compare suspended ceilings. To achieve this, it defines those product characteristics which can or must be declared on product labels and in product documentation. As reliability is one of our core values, Rockfon has been one of the first to place CE marked products on the market.

In the interest of maximising the information we provide to our customers, the Rockfon Group has selected a considerable number of parameters that are now declared for each of our CE marked products. Rockfon not only declares the mandatory properties Reaction to Fire and Emission of Formaldehyde, but also Sound Absorption, Flexural Tensile Strength, Light Reflection, Thermal Insulation, Impact Resistance and Sound Insulation when relevant. We are one of the few ceiling suppliers that declare flexural tensile strength. This is very important as many ceiling tiles do not withstand humidity well and are at risk of sagging.

All relevant Rockfon ceiling tiles have been CE marked since October 2005, across all our factories in Europe. In addition, Rockfon has chosen the highest level of attestation of conformity (AOC). This means that the independent certification organization – Belgian Construction Certification Association (BCCA) – has verified our initial type testing program and checks our whole supply chain twice a year.

The initial type testing has been performed on all declared values by independent and certified laboratories. Furthermore, our continuously audited Factory Production Control will always ensure that customers receive products that live up to the standards of the product performance declared on the CE marked label.

	Ceiling tiles	Ceiling grids	Ceiling system (tile + grid)
Must be declared in accordance with EN 13964	<ul style="list-style-type: none"> Reaction to fire Emission of formaldehyde 	<ul style="list-style-type: none"> Reaction to fire 	<ul style="list-style-type: none"> Reaction to fire Release of formaldehyde
If declared, then EN 13964 is mandatory	<ul style="list-style-type: none"> Sound absorption Thermal conductivity Flexural tensile strength Durability (corrosion of metal tiles) Shatter (only for brittle materials) 	<ul style="list-style-type: none"> Load-bearing capacity Durability (corrosion of metal grids) And others... 	<ul style="list-style-type: none"> Fire resistance Sound insulation Impact resistance
If declared, EN 13964 is recommended but not mandatory	<ul style="list-style-type: none"> Light reflection Colour definition Gloss definition 		

