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PLASTERBOARD SYSTEMS - WATER DAMAGE

Overview

The majority of gypsum based plasterboard systems manufactured by the members of The GPA are specified for internal use only. This document looks at guidance to support the specified performance of the plasterboard systems as water damage may change on system performance and negate the system provider's warranty.

Manufacture, Storage & Transportation *(Pre-Project Location)*

Members of The GPA manufacture and store plasterboard in a controlled environment free of water. The packaging of the product has been specifically designed allowing movement by forklift or pallets truck with the bearers or pallet provided, whilst keeping the resistance to water damage.

Our members product a range of "moisture resistant" plasterboards, these have designation of "Type H" to BS EN 520:2004 + A1:2009. These products have a limited moisture resistance performance and should not be considered as "water resistant" or a substitute for not providing protection or construction phase planning as discussed within this document.

From The GPA members manufacturing facility through the supply chain of custody, it is imperative that packaging and the method of ground bearing support (bearers or pallet) always stays intact and the gypsum product is transported within a closed sided vehicle. If the packaging becomes damaged during transportation or storage by a third party, it should be replaced to ensure water and or physical damage does not occur.

Should the plasterboard and or bagged jointing/plaster materials be stored within a third party facility, before delivery to the final project location. It must be placed within a dry, covered storage facility, on level dry ground, supported on bearers at sufficient centres or a pallet of the same area as the plasterboard. Furthermore, should the pallet of the gypsum plasterboard be broken from bulk through the supply chain, the new packaging provided should have the equivalent dry protected storage conditions and material support should be maintained.

Construction Phase

Gypsum plasterboard systems for internal use, should be protected at all times from ingress/damage by water, in addition for most plasterboard types, exposure to excessively high humidity environments must also be avoided. Consideration during the construction phase should be given through project planning, coordination & construction thus ensuring the gypsum plasterboard systems are fully protected at all times from moisture, excessively high humidity, water ingress/damage.

Common points of water ingress & moisture damage are but not limited to:

- External envelope – not installed or incomplete i.e. façade, roof, risers, shafts, fenestration.
- Water flooding to floor slabs.
- Gypsum systems being constructed in close proximity to open or incomplete façade elements or riser shafts.

Construction Phase (Cont.)

- Damp, wet and or saturated masonry or concrete backgrounds with direct bonded (dot and dab) systems. Moisture is absorbed by the bonding material, which may cause a failure and or track to and through the plasterboards.
- Failure of wet services during installation and or commissioning.
- The storage of plasterboard, bagged jointing compounds/plaster materials should be protected from water penetration from the ground/slab by use of a pallet or bearer. With the products continuously protected by a waterproof wrapping, which should be reapplied when materials are not being drawn upon.
- Water ingress or significant levels of moisture, do not only affect gypsum based materials but also the timber that is used within the partition, ceiling, or lining. Timber elements such as studs, noggins or door grounds may warp, lose structural performance, or develop mould growth.

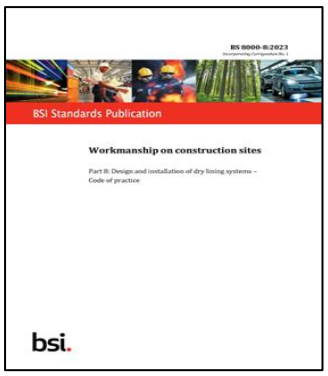
Impact on Gypsum Systems

The ingress of excessive moisture into plasterboard systems, partitions, linings & ceiling linings, can have a number of effects. Which if left investigated, can cause future failures both visually and system performance if not dealt with promptly to the system manufacturers guidance, recommendations.

If left untreated moisture ingress into the plasterboard system can cause mould, staining through paint finish, failure of applied paint finish, delamination of paper from gypsum core, delamination of jointing or skim plaster from paper and risk of corrosion to untreaded cut edges of metal components.

Water damage raises concerns over the system performance i.e. fire, acoustics, strength, and stability. Since Plasterboards are tested during production to conform to BS EN 520:2004 + A1:2009. When contributing to the performance of a system such as for fire resistance, sound insulation, or system robustness they a tested to the corresponding relevant standards e.g. for the fire resistance of partitions BS EN 1364-1:2015. There is no evidence through testing to any of the referenced standards to substantiate the product or systems performance once water ingress (saturation of plasterboards) has prevailed. The effect of moisture damage to plasterboard can not only vary considerably, they can potentially also be both lasting and permanent, even after affected plasterboards have subsequently dried.

It is therefore not possible to accurately replicate with any confidence of repeatability the affects any such water ingress/moisture damage may have on the performance contribution and stability of plasterboards. Existing tested performance substantiation cannot be relied upon in such situations



Guidance

Guidance from individual members can be accessed via the following links British Gypsum, Gyproc, Knauf, Siniat

More guidance on the site preparation prior to installation of plasterboard systems, along with the material storage can be access through BS 8000-8:2023

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