



## Impregnation of gypsum plasterboard



### Impregnation of gypsum plasterboard

**HydroWax® 170** was developed specially as a waterproofing agent for the production of impregnated plasterboard (GKI, GKFI).

It is characterized by its outstanding waterproofing action, especially in hemihydrate gypsum plaster (*Figs. 1 and 2*). The dispersion contains wax components that are specifically coordinated to produce the performance required by the customer during the production of plasterboard. However, this is only possible if these waxes are stabilized with an emulsifying system that is precisely adapted to the needs of the gypsum plaster industry. This is carried out at Sasol Wax in plants using the latest homogenizing technology.

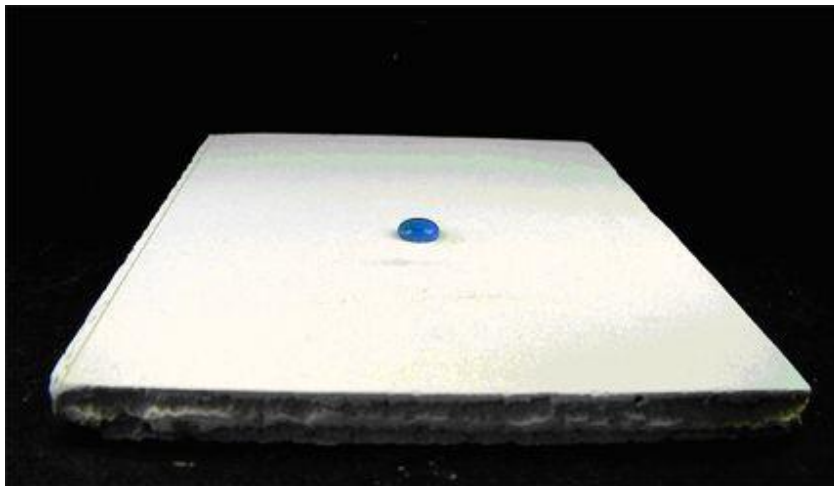


Figure 1: Waterproofing action

The combination of these three factors, namely wax, emulsifier and production parameters, means that **HydroWax® 170** represents a new and unique alternative to familiar waterproofing systems in plasterboard production. It opens up new resources in respect both of the mix formulation and of the production technology, which increases the flexibility of plasterboard producers.

Furthermore, **HydroWax® 170** is produced at several locations in Europe and is available to the users, most of whom also operate internationally, in a uniform and consistently high quality. This ensures short distances, short delivery times and regional availability.



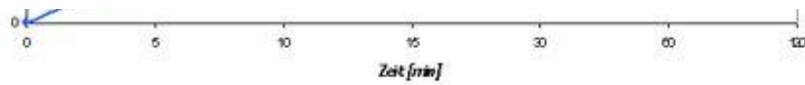


Figure 2: Water absorption (DIN 18180) by hemihydrate gypsum plaster on addition of 4.5 % HydroWax® 170

Another technical advantage with the use of **HydroWax® 170** is that the product does not destroy foam. This is particularly important as it means that the density and weight per unit area of the plasterboard can be adjusted as usual by the carefully controlled use of surfactants. The flow and stiffening characteristics of the plaster slurry, as well as the good adhesion of the paperboard to the gypsum core before and after drying that is so important, are the same as for the production of standard plasterboard without waterproofing additives.

Nor is there any interference with the internal recycling of production residues. Because of the very pale wax phase **HydroWax® 170** has a whiteish colour. This means that addition of the impregnating agent does not affect the natural colour of the gypsum, so it is also possible to produce very light- coloured impregnated products. Due to its low viscosity (*Table 1*) the dispersion is very easy to dispense. The water content can be included in the calculation of the amount of water in the plaster slurry.

Water content [%]	Viscosity [mPas]	pH value	Emulsifier
61-65	100	12	non- ionic / anionic

Table 1: Properties of HydroWax® 170

The dispersion is self- preserving due to its high pH value, so there is no need to add extra biocide in the formulation of **HydroWax® 170**. The usual input concentrations to achieve water absorptions of less than 5 % are 4-5 wt. % of the mass of dry gypsum plaster. Precise adjustment to achieve the required product quality is carried out on site to take account of the particular grades of plaster and the specific production technology of the plasterboard manufacturer.

---

The content on this Sasol Wax web site is proprietary to Sasol Wax and only for general information and use. In particular the content does not constitute any form of legal or others advice, recommendation or arrangement by Sasol Wax (which includes its divisions, affiliates, joint ventures or departments) or its associated information providers, and is not intended to be relied upon by users in making (or refraining from making) any specific investment or other decisions. Appropriate expert advice should be obtained before making any such decision or using the information for any specific purpose.