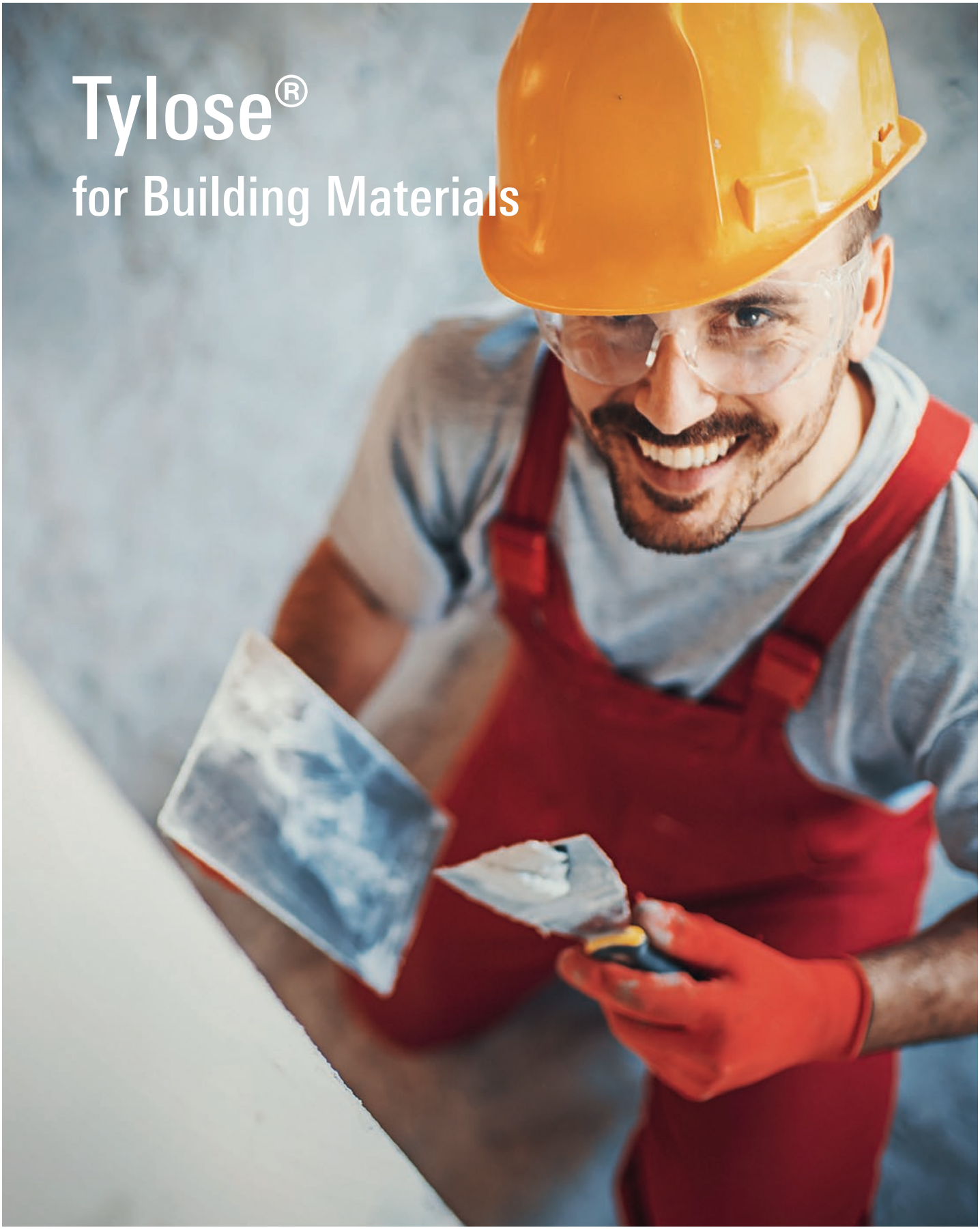
ShinEtsu
SE Tylose GmbH & Co. KG

Your Best Partner

Tylose®
for Building Materials



Tylose® for Building Materials



Tylose MC products are essential elements of many construction materials. The laying of tiles utilising the thin bed process and the processing of mortars in continuously working plastering machines is only possible with the use of Tylose MC. In building material systems Tylose MC controls the water retention and the consistency, whilst at the same time Tylose MC products increase the homogeneity and stability of all types of mortar. To achieve this only very small addition rates are required.

The most important fields of application for Tylose MC are adhesives, renders and trowelling compounds.

Application Properties

Construction materials are optimised with the following properties of Tylose:

- Water retention
- Consistency control
- Adhesion improvement
- Stabilisation of air pores
- Improvement of workability

Nomenclature of Tylose®

Example: Tylose MHS 30027 P6

MHS		30027		P6	
	Chemical composition and type of etherification		**Viscosity level and modification**		**Particle size distribution and chemical refinement**
	Type of ether	⋮	**Viscosity level***		
M	Methyl	150000	The viscosity level is based on Hoeppler: 2 % solution of the commercial product with 5 % moisture content, 20 °C, 20 °dH (German hardness)	K	Short delayed solubility
H	Hydroxyethyl	100000		Y	Standard delayed solubility
O	Hydroxypropyl	60000			
		30000			
		20000			**Powder types**
		15000			
		10000			
	Degree of etherification	6000		P2	Powder (< 180 µm)
		4000		P3	Fine powder (<125µm, with reduced ultrafine particle content)
B		2000			
F	Optimised degree of etherification	1000			
S	for different fields of application	300	**Consistency increasing modification**	P4	Fine powder (< 125 µm)
T		200		P6	Ultrafine powder (< 100 µm)
		⋮			
		01	The modification is indicated by at least one of the two last digits is a number > 0. The value of the figure does not correspond with the degree of modification.		**Granules**
		02			
		03		G8	Granule (< 300 µm)
		⋮			

***Note:** Historically, the classification of the viscosity levels underlying this nomenclature is based on viscosity measurements with the Hoeppler falling ball viscometer according to DIN 53015 (2001). However, the viscosity ranges given in the SE Tylose product specifications are determined using Brookfield rotation viscometers.

Cement Adhesives



Cementitious thin bed adhesives are used to adhere ceramic tiles, to build walls of aerated concrete or lime stone bricks and to install exterior insulating finishing systems (EIFS). They offer an easy and light workability, a high efficiency and guarantee a long durability.

Cement tile adhesives have to be easy to trowel. They must provide long embedding time, high slip resistance and sufficient adhesion strength. These properties can be influenced by Tylose® MC. Adhesives for block laying are used to build up walls of aerated concrete blocks, sand-lime bricks or standard bricks. EIFS adhesives ensure an excellent bond between substrate and insulating boards. Tylose MC improves the workability of EIFS adhesives and increases both adhesion and sag resistance.



Recommended Tylose Products

Tylose grades	Thickening effect				Cement adhesives					
	Slight	Moderate	Significant	Extreme	Cost-effective tile adhesives	Standard tile adhesives	Premium tile adhesives	Block laying adhesives	EIFS adhesives	Ternary rapid-set tile adhesives
Tylose MHF 6016 P4			●				■		■	
Tylose MH 10007 P4		●							■	
Tylose MHF 10015 P4			●				■			
Tylose MH 15002 P6		●						■	■	
Tylose MHF 15019 P4			●			■			■	
Tylose MH 20006 P4			●			■	■			
Tylose MHF 20007 P4				●			■			
Tylose MHF 20010 P4			●			■	■			
Tylose MHF 20011 P4			●							■
Tylose MHF 30000 P4	●				■					■
Tylose MHS 30024 P4		●				■		■		■
Tylose MH 60001 P6	●				■					
Tylose MH 60004 P6		●				■				
Tylose MO 60016 P4	●				■				■	
Tylose MH 100001 P6	●				■			■		
Tylose MHS 150003 P4		●			■					
Tylose MHF 150013 P6		●			■	■				
Tylose MH 300003 P6	●				■					

Cement Based Renders and Trowelling Compounds



Renders are mixtures of mineral binders, aggregates and auxiliaries. Depending on the process, there is a distinction between hand and machine application. Renders are used for base coating, insulation, renovation and decorative purposes. Renders based on cement or cement/hydrated lime can be employed for exterior and interior work. Cement based jointing and trowelling compounds are used for repairing systems and to smooth coarse walls and floors. Grouts are applied to fill the gaps between ceramic or stone tiles. Tylose® MC is an important additive ensuring there is sufficient water retention in renders and trowelling compounds. Additional advantages are better workability and an increase of the adhesion strength.

Machine applied renders are mixed in continuously or discontinuously working plastering machines. These enable coverage of large wall and ceiling areas by a highly efficient technique. Continuously operating plastering machines need to be fed with premixed renders containing Tylose. Other additives (e.g. Hostapur OSB, Tylovis SE 7 or Tylovis EP 28) can be added as required.

Recommended Tylose Products

Tylose grades	Thickening effect			Cement based renders and trowelling compounds							
	Very slight	Slight	Moderate	Base coats	One coat renders	Decorative renders	Skim coats	Self-levelling compounds	EIFS base coats	Grouts	Waterproofing systems
Tylose MH 300 P2	●							■			
Tylose MH 6000 YP4		●								■	
Tylose MH 6002 P4			●			■			■	■	
Tylose MH 10007 P4			●			■			■		
Tylose MHS 10012 P6			●		■	■			■		
Tylose MH 15002 P6			●						■		
Tylose MB 15009 P2			●						■		
Tylose MHS 30027 P6			●	■			■				
Tylose MHS 60000 YP4		●									■
Tylose MH 60001 P6		●		■	■		■				
Tylose MH 60010 P4			●	■	■						
Tylose MO 60016 P4		●		■			■				
Tylose MH 100001 P6		●					■				
Tylose H 20 P2	●							■			
Tylose H 300 P2	●							■			
Tylose HS 30000 YP2		●									■

Gypsum Based Building Materials

Gypsum is a well established construction material for interior applications. It offers good workability and its strength can be adapted for every application as required. Gypsum building materials generate a comfortable living atmosphere due to good humidity balance. Additionally, gypsum shows excellent fire resistance. However, it is not water resistant, therefore only interior use is possible. Combinations of gypsum and hydrated lime are very common in plaster formulations.

The main applications for gypsum based construction materials are plasters (hand or machine applied), trowelling compounds, joint fillers and adhesives. With machine applied plasters, an efficient covering of large walls and ceiling areas is possible.



Tylose® MC products for gypsum application are optimised in many ways and offer

- High water retention over the whole workability time
- Optimised consistency
- Reduced lump formation

In addition dispersing agents (e.g. Tylovis EP 28), air entraining agents (e.g. Hostapur OSB) and starch ethers (e.g. Tylovis SE 7) improve workability and are used in combination with Tylose MC.

Recommended Tylose Products

Tylose grades	Thickening effect				Gypsum based building materials				
	Slight	Moderate	Significant	Extreme	Hand applied plasters	Machine applied plasters	Trowelling compounds	Joint fillers	Adhesives
Tylose MH 15018 P4				●			■	■	
Tylose MO 30023 P4			●		■				
Tylose MH 30026 P4				●			■	■	
Tylose MH 30029 P2			●		■				
Tylose MH 60001 P4	●				■	■	■		■
Tylose MH 60009 P4				●				■	
Tylose MH 60010 P4		●			■	■	■		■
Tylose MHS 100005 P3		●				■			
Tylose MHS 100006 P3		●				■			
Tylose MHS 150003 P4		●				■	■		
Tylose MHS 150012 P4		●				■			

Emulsion Based Systems

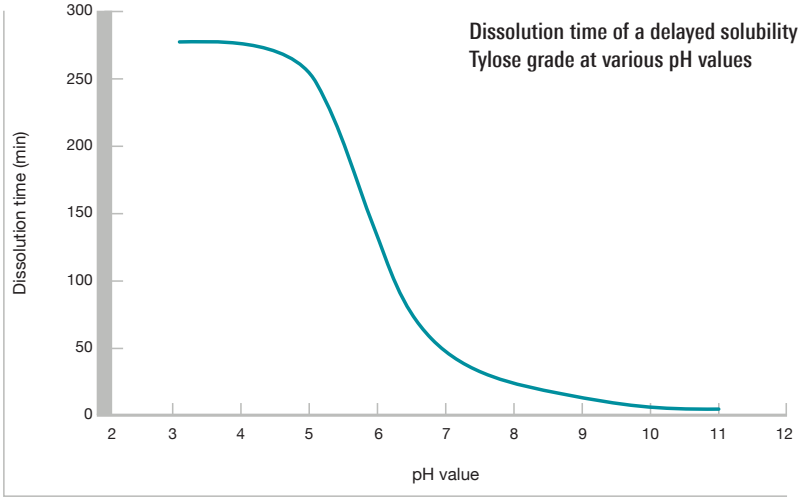


Emulsion based construction products are ready to use paste formulations. These formulations include Tylose® MC (MHEC and MHPC) or Tylose HEC or both. Tylose improves water retention, consistency and adhesion of emulsion based building materials.

The most important applications are

- Ready mixed joint fillers
- Emulsion based decorative plasters
- Emulsion based tile adhesives
- Spray applied trowelling compounds

To avoid lump formation during the mixing of emulsion based systems, the use of Tylose with either a short ("K") or standard ("Y") delayed solubility is recommended. Adjusting the pH to alkaline values can shorten or even eliminate the delayed solubility. Please note that the pH value should be adjusted after the Tylose is completely dispersed.



Recommended Tylose Products

Tylose grades	Ready mixed joint fillers	Emulsion based decorative plasters	Emulsion based tile adhesives	Spray applied trowelling compounds
Tylose HS 6000 YP2		■		
Tylose HS 15000 YP2	■	■	■	■
Tylose HS 30000 YP2	■		■	
Tylose HS 60000 YP2	■		■	
Tylose MH 200 YP2		■		■
Tylose MH 6000 YG8		■		
Tylose MH 30000 YP4	■			■
Tylose MHBS 60000 KP4	■		■	
Tylose MHS 60000 YP4	■		■	
Tylose MOT 60000 YP4	■		■	

Tylose for 3D Concrete Printing



3D Concrete Printing (3DCP) is an important aspect of digital fabrication in the building industry.

There are several 3D printing technologies such as extrusion 3D printing, shotcrete 3D printing or particle-bed 3D printing. The ladder technique offers unique possibilities in terms of fabrication of filigree and form free components with high resolution, whereas the 3D extrusion and shotcrete printing techniques are limited due to their layer by layer process using a nozzle or spray gun. However, in common with all techniques, a thickener such as Tylose is needed to achieve a smoothly printing process and/or superior printing result. For extrusion and shotcrete the viscosity modifying admixtures, if including Tylose, provide the correct rheology: A shear-thinning effect during pumping and good thixotropy (yield point) after processing. In addition, a good wettability between the applied mortar layers is desired to avoid "cold bonds" during hydration.

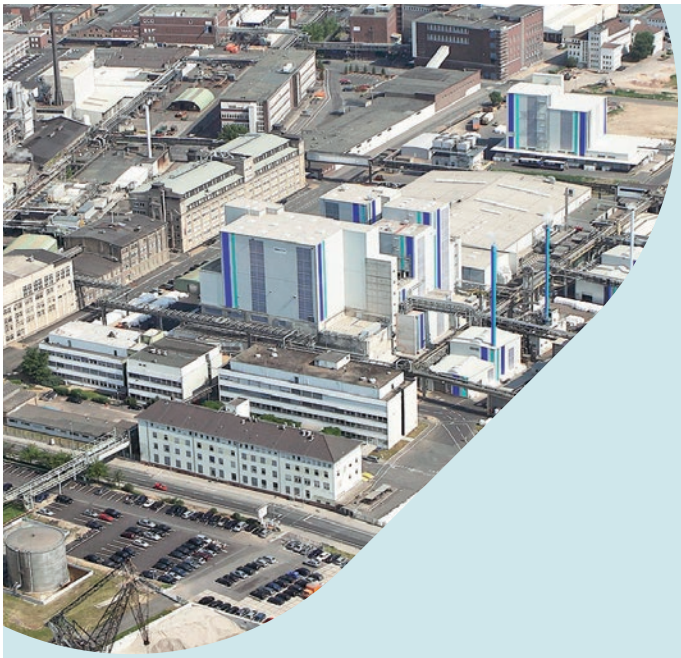
In the particle-bed 3D printing process, the powder particles are selectively activated by the addition of water (SCA) or a cement suspension (SPI). The presence of Tylose improves the fluid intrusion behaviour and the shape accuracy of the printed object (better resolution). In addition, Tylose ensures a homogenous and crack-free hydration of the printed structures.

Recommended Tylose Products

Tylose grades	Technical Information					3D Printing Techniques		
	Consistency build-up	Final consistency	Shear-thinning effect	Heat stability	Cement retardation	Extrusion	Particle-bed / SPI [1]	Particle-bed / SCA [2]
Tylose MH 300 P2	slow	low	low	moderate	moderate	■	■	■
Tylose MHS 15000 P6	fast	medium	moderate	high	high	■		
Tylose MH 100000 P6	fast	high	very high	moderate	moderate			■
Tylose H 300 P2	slow	low	low	very high	very high	■	■	■
Tylose HS 30000 YP2	slow	medium	moderate	very high	high		■	

[1] Selective Paste Intrusion
[2] Selective Cement Activation

SE Tylose GmbH & Co. KG



About us

SE Tylose GmbH & Co. KG is one of the major manufacturers of cellulose ethers world-wide, supplied under the brand name Tylose®. Tylose is used in a wide variety of products and applications.

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