

R+D HyCon® R 6450 F

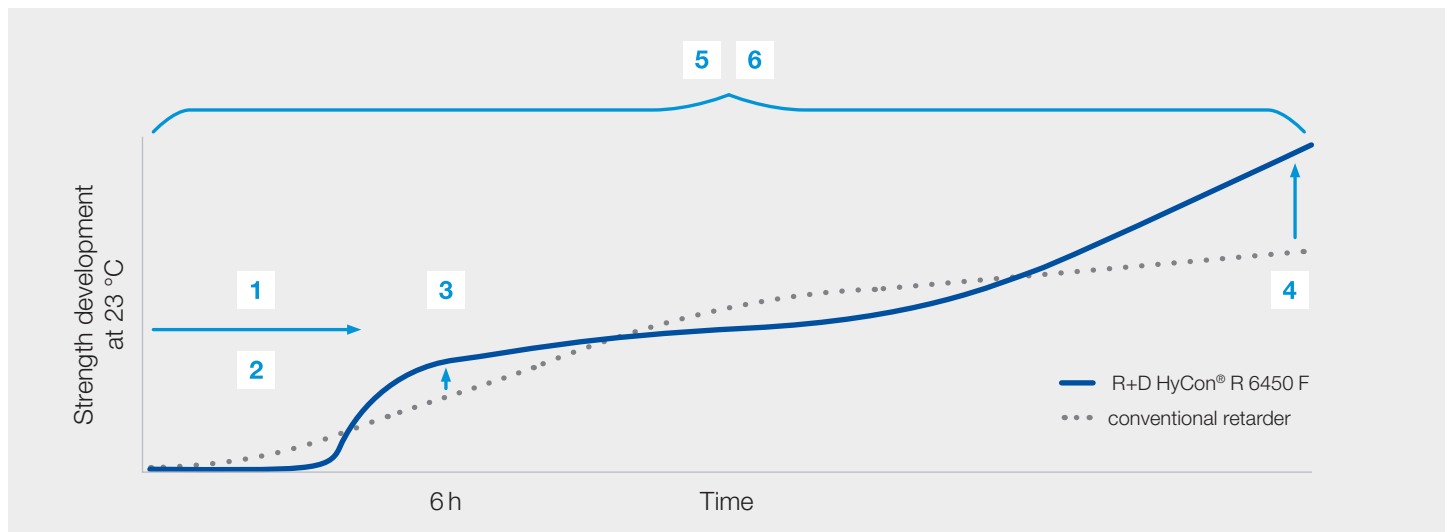
Innovative retarder for fast setting cementitious tile adhesives (CTA)

What is R+D HyCon® R 6450 F?

R+D HyCon® R 6450 F is an innovative retarder for fast setting cementitious tile adhesives (CTA) containing Calcium Aluminate Cement (CAC).

How does it work?

Compared to conventional retarders such as tartaric or citric acid R+D HyCon® R 6450 F controls the hydration of the CAC with only little impact on the OPC reaction. This ensures an improved strength development resulting in the benefits **1–6** as shown below.



Benefits with R+D HyCon® R 6450 F

<p>1</p> <p>✓ Constant workability</p>	<p>2</p> <p>✓ Prolonged open time</p>	<p>3 4</p> <p>✓ Higher 6h and final tensile adhesion strength</p>	<p>5</p> <p>extended shelf life</p> <p>✓ Dry mortar reveals high robustness towards ageing</p>	<p>6</p> <p>higher temperature robustness</p> <p>✓ Dry mortar reveals comparable setting times at 5 and 23 °C</p>
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Dosage recommendation and performance characteristics at different OPC / CAC ratios?

Benefit	OPC / CAC ratio			
	80 / 20	60 / 40	40 / 60	20 / 80
Higher 6h tensile adhesion strength	■	■	not relevant	not relevant
Higher final tensile adhesion strength	■	■	■	not relevant
Longer open time + constant workability	■	■	■	■
Extended shelf life of dry mortar	■	■	■	■
Higher temperature robustness	■	■	■	■
Lithium carbonate reduction	■	■	■	■
Dosage recommendation, [%] in relation to total weight of dry mortar	0.2–0.6	0.3–0.7	0.3–0.7	0.4–0.8

Application example in a fast setting CTA based on a OPC / CAC ratio of 80 / 20

Retarder dosage and amount of mixing water was adjusted to achieve same initial setting (1 hour) and tile slip (< 0.5 mm).

Raw materials	OPC CEM I 52.5 R	Calcium aluminate cement	Anhydrite	Lithium carbonate	Calcium hydroxide	Quarz sand (<0.5 mm)	Limestone powder	RDP powder	Cellulose ether	Starvis® RS 421/01 F
Dosage (%)	30.5	7.5	2.5	0.1	0.4	48.85	6.0	3.5	0.35	0.3

+ 0.15 % tartaric acid Mixing water: 26 %	+ 0.45 % R+D HyCon® R 6450 F Mixing water: 24 %
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Visual open time

Recipe with tartaric acid	Recipe with R+D HyCon® R 6450 F
<p>10 minutes open time</p>	<p>25 minutes open time</p>

✓ Recipe with R+D HyCon® R 6450 F reveals a significant longer open time.

Workability

Recipe with tartaric acid	Recipe with R+D HyCon® R 6450 F
<p>Stiffening over time</p>	<p>Constant workability</p>

✓ R+D HyCon® R 6450 F ensures constant workability over time.

Low temperature performance

Recipe with tartaric acid	Recipe with R+D HyCon® R 6450 F

✓ CTA with R+D HyCon® R 6450 F reveals robust setting times and 6 h tensile adhesion strength at low temperatures.

Lithium carbonate reduction

Recipe with tartaric acid	Recipe with R+D HyCon® R 6450 F

✓ With R+D HyCon® R 6450 F lithium carbonate can be significantly reduced without performance loss.

Shelf life of dry mortar

Recipe with tartaric acid	Recipe with R+D HyCon® R 6450 F

✓ CTA with R+D HyCon® R 6450 F has a significantly higher robustness towards ageing as setting times stay constant over time.

Final tensile adhesion strength

Recipe with tartaric acid	Recipe with R+D HyCon® R 6450 F

✓ Recipe with R+D HyCon® R 6450 F reveals higher final tensile adhesion strength values.

Further information (test formulations and further test results) is available on demand. Please feel free to contact our local sales representatives.
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