

# Mortar Tests

Table 3

## TESTS ON PURE NHL MORTARS

### Mixing Ratio 1 : 3

**Note:** performance figures will vary using different sands. For example see figures on NHL 3.5 tested using a 3mm - 0.075 (#6 to #200) well graded common sand (Doyeaux).

	NHL 5		NHL 5		NHL 3.5		NHL 3.5		NHL 2		NHL 2		Norm/method used for test
	Metric		U.S.		Metric		U.S.		Metric		U.S.		
Water content	gr.	208	oz.	7.34	gr.	211	oz.	7.44	gr.	206	oz.	7.26	
Water/binder ratio		0.92		0.92		1.23		1.23		1.47		1.47	
Penetration	mm	7	Inch	9/32	mm	8.5	Inch	21/64	mm	9.5	Inch	3/8	EN 459-2 Pr. 5.5.3
Set (beginning)	h	3		3	h	6		6	h	9.3		9.3	EN 196.2 P. 6.2
Bulk density (no curing)	kg/m <sup>3</sup>	2105	lb/ft <sup>3</sup>	131	kg/m <sup>3</sup>	2110	lb/ft <sup>3</sup>	131	kg/m <sup>3</sup>	2100	lb/ft <sup>3</sup>	131	EN 459.2 P. 5.8
Air content	%	0		0	%	3		3	%	2		2	EN 459.2 P. 5.7
Elast. Moduli	Mpa		Psi		Mpa		Psi		Mpa		Psi		
28 days		10000		1450		8970		1301		9000		1305	French Std.
6 months		16900		2450		12450		1805		11800		1711	on one coat plasters
12 months		16150		2342		13150		1907		11900		1725	
<b>24 months</b>		<b>17540</b>		<b>2543</b>		<b>13670</b>		<b>1982</b>		<b>11750</b>		<b>1704</b>	
Flexural Strength	Mpa		Psi		Mpa		Psi		Mpa		Psi		
7 days		0.4		58		0.28		40.6		0.25		36.25	as above
28 days		0.66		95.7		0.65		94.25		0.72		104.4	as above
6 months		1.55		224.75		1.38		200.1		1.08		156.6	
12 months		1.8		261		1.5		217.5		1.05		152.25	
<b>24 months</b>		<b>2.05</b>		<b>297.25</b>		<b>1.53</b>		<b>221.85</b>		<b>1.05</b>		<b>152.25</b>	
Compressive Strength	MPa		Psi		MPa		Psi		MPa		Psi		
7 days		0.88		128		0.53		77		0.47		68	EN459-2 P. 5.1
28 days		1.5		217		1.34		194		1.25		181	
6 months		5.31		770		3.94		571		2.88		418	
12 months		6.5		942		3.9		565		2.9		420	
<b>24 months</b>		<b>7.8</b>		<b>1131</b>		<b>3.97</b>		<b>576</b>		<b>2.75</b>		<b>399</b>	
Permeability @ complete carb. (gr. of air x m2 x hour x mmHg)		0.52		0.52		0.72		0.72		0.71		0.71	Fr. Std. For one coat plasters
Shrinkage at 28 days	mm.m <sup>-1</sup>	0.15	%	0.015	mm.m <sup>-1</sup>	0.25	%	0.025	mm.m <sup>-1</sup>	0.51	%	0.051	
Water absorption	l.h.m <sup>-2</sup>	5.5	%	5.5	l.h.m <sup>-2</sup>	9.4	%	9.4	l.h.m <sup>-2</sup>	15.4	%	15.4	
Capillarity	g.min	4.61		4.61	g.min	6.3		6.3	g.min	8.7		8.7	