

# Mortar Tests

Table 1

## TESTS ON PURE NHL MORTARS

### Mixing Ratio 1 : 2

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.	225	oz.	7.93	gr.	226	oz.	7.97	gr.	228	oz.	8.04	
Water/binder ratio		0.67		0.67		0.88		0.88		1.07		1.07	
Penetration	mm	8	Inch	5/16	mm	9.5	Inch	3/8	mm	11	Inch	7/16	EN 459-2 Pr. 5.5.3
Set (beginning)	h	4.3		4.3	h	5.3		5.3	h	8 3/4		8 3/4	EN 196.2 P. 6.2
Bulk density (no curing)	kg/m <sup>3</sup>	2110	lb/ft <sup>3</sup>	132	kg/m <sup>3</sup>	2110	lb/ft <sup>3</sup>	132	kg/m <sup>3</sup>	2100	lb/ft <sup>3</sup>	131	EN 459.2 P. 5.8
Air content	%	0		0	%	1.6		1.6	%	2		2	EN 459.2 P. 5.7
Elast. Moduli	Mpa		Psi		Mpa		Psi		Mpa		Psi		
28 days		10800		1566		9010		1306		9025		1308	French Std.
6 months		18000		2610		16250		2356		12600		1827	on one coat plasters
12 months		18510		2684		15280		2216		12515		1815	
<b>24 months</b>		<b>21500</b>		<b>3117</b>		<b>17480</b>		<b>2535</b>		<b>13375</b>		<b>1939</b>	
Flexural Strength	Mpa		Psi		Mpa		Psi		Mpa		Psi		
7 days		0.53		76.85		0.43		62.35		0.28		40.6	as above
28 days		0.9		130.5		0.73		105.85		0.74		107.3	as above
6 months		2.2		319		2.18		316.1		1.28		185.6	
12 months		2.4		348		2.25		326.25		1.3		188.5	
<b>24 months</b>		<b>2.51</b>		<b>363.95</b>		<b>2.6</b>		<b>377</b>		<b>1.41</b>		<b>204.45</b>	
Compressive Strength	Mpa		Psi		Mpa		Psi		Mpa		Psi		
7 days		1.96		284		0.75		109		0.62		90	EN459-2 P. 5.1
28 days		2.2		319		1.88		273		1.48		215	
6 months		7.31		1060		7.1		1029		3.84		557	
12 months		9.28		1346		7.5		1087		4		580	
<b>24 months</b>		<b>10.81</b>		<b>1567</b>		<b>8.63</b>		<b>1251</b>		<b>4.25</b>		<b>616</b>	
Permeability @ complete carb. (gr. of air x m <sup>2</sup> x hour x mmHg)		0.55		0.55		0.64		0.64		0.68		1.68	Fr. Std. For one coat plasters
Shrinkage at 28 days	mm.m <sup>1</sup>	0.17	%	17	mm.m <sup>1</sup>	0.59	%	0.059	mm.m <sup>1</sup>	0.75	%	0.075	
Water absorption	l.h.m <sup>2</sup>	3	%	3	l.h.m <sup>2</sup>	4.5	%	4.5	l.h.m <sup>2</sup>	10.5	%	10.5	
Capillarity	g.min	0.88		0.88	g.min	1.18		1.18	g.min	3.05		3.05	