

# Mortar Tests

Table 2

## TESTS ON PURE NHL MORTARS

### Mixing Ratio 1 : 2.5

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 3.5		NHL 3.5		NHL 2		NHL 2		Norm/method used for test
	Metric		U.S.	Metric	U.S.	Metric	Doyeaux sand	U.S.	Metric	U.S.	Metric	U.S.	Metric	U.S.			
Water content	gr.	215	oz.	7.58	gr.	220	oz.	7.76	gr.	250	oz.	8.82	gr.	214	oz.	7.55	
Water/binder ratio		0.79		0.79		1.07		1.07		1.21		1.21		1.27		1.27	
Penetration	mm	7.5	Inch	19/64	mm	9	Inch	23/64	mm	10	Inch	25/64	mm	8.5	Inch	21/64	EN 459-2 Pr. 5.5.3
Set (beginning)	h	3.3		3.3	h	6		6	h	6.15		6.15	h	9		9	EN 196.2 P. 6.2
Bulk density (no curing)	kg/m <sup>3</sup>	2115	lb/ft <sup>3</sup>	132	kg/m <sup>3</sup>	2140	lb/ft <sup>3</sup>	134	kg/m <sup>3</sup>	1975	lb/ft <sup>3</sup>	123	kg/m <sup>3</sup>	2080	lb/ft <sup>3</sup>	130	EN 459.2 P. 5.8
Air content	%	0		0	%	0		0	%	0		0	%	1		1	EN 459.2 P. 5.7
Elast. Moduli	Mpa		Psi		Mpa		Psi		Mpa		Psi		Mpa		Psi		
28 days		11000		1595		9000		1305		8600		1247		9800		1421	French Std.
6 months		17050		2472		13505		1958		12050		1747		12030		1744	on one coat plasters
12 months		17280		2506		13620		1975						12030		1744	
<b>24 months</b>		<b>18020</b>		<b>2613</b>		<b>13785</b>		<b>1999</b>						<b>12000</b>		<b>1740</b>	
Flexural Strength	Mpa		Psi		Mpa		Psi		Mpa		Psi		Mpa		Psi		
7 days		0.38		55.1		0.31		44.95		0.28		40.6		0.31		44.95	as above
28 days		0.8		116		0.48		69.6		0.45		65.25		0.73		105.85	as above
6 months		1.75		253.75		1.7		246.5		1.3		188.5		1.2		174	
12 months		2.2		319		2.05		297.25						1.25		181.25	
<b>24 months</b>		<b>2.3</b>		<b>333.5</b>		<b>2</b>		<b>290</b>						<b>1.15</b>		<b>166.75</b>	
Compressive Strength	MPa		Psi		MPa		Psi		MPa		Psi		MPa		Psi		
7 days		1		145		0.57		83		0.5		72		0.53		77	EN459-2 P. 5.1
28 days		2		290		1.47		213		1.3		188		1.36		197	
6 months		5.91		857		5.34		774		4.02		583		3		435	
12 months		8.44		1224		5.9		855						2.9		420	
<b>24 months</b>		<b>8.81</b>		<b>1277</b>		<b>6</b>		<b>870</b>						<b>3</b>		<b>435</b>	
Permeability @ complete carb.																	Fr. Std. For
(gr. of air x m2 x hour x mmHg)		0.5		0.5		0.65		0.65						0.71		0.71	one coat plasters
Shrinkage at 28 days	mm.m <sup>1</sup>	0.13	%	0.013	mm.m <sup>1</sup>	0.44	%	0.044	mm.m <sup>1</sup>		%		mm.m <sup>1</sup>	0.6	%	0.06	
Water absorption	l.h.m <sup>2</sup>	3.2	%	3.2	l.h.m <sup>2</sup>	7.3	%	7.3	l.h.m <sup>2</sup>		%		l.h.m <sup>2</sup>	12.1	%	12.1	
Capillarity	g.min	2.54		2.54	g.min	4.7		4.7	g.min				g.min	7.84		7.84	