

EU Norm (EN459) Summary of Terminology for Building Limes

BUILDING LIMES		
AIR LIMES	Hardening only in contact with CO ₂ in the air (Carbonation) Classified according to their Calcium oxide/magnesium oxide content (90,85,80,70)	
OLD Quicklime	NEW Quicklime	Main components Calcium Oxide + Magnesium Oxide calcinated and producing an exothermic reaction in contact with water
CAEB	CL (calcium lime)	Calcium oxide or Calcium Hydroxide
	DL (dolomitic lime) Semi hydrated and hydrated	Calcium and Magnesium Oxides OR Calcium and Magnesium Hydroxides
	Hydrated lime	CL or DL resulting from controlled slaking of quicklime. Produced as POWDER, PUTTY or SLURRY (milk of lime).

Hydraulic Lime - Setting and hardening in contact with water. Air setting also present. Classified according to Compressive Strength expressed in N/mm² measured @ 28 day in mortars prepared with a 1:1 binder/sand ratio

OLD	NEW	Natural hydraulic lime (NHL)
Eminently Hydraulic or XHN 100	NHL 5	NATURAL HYDRAULIC LIMES Argillaceous or siliceous limestone burned and slaked . Reduced to powder with or without grinding. NO ADDITION ALLOWED
Moderately hydraulic or XHN 60	NHL 3.5	
Feebly hydraulic or XHN 30	NHL 2	
IF ADDITIONS OF SUITABLE POZZOLANIC OR HYDRAULIC MATERIALS (up to 20%) ARE MADE THE ABOVE PRODUCTS MUST BEAR THE DESIGNATION OF NHL-Z		
ARTIFICIAL HYDRAULIC LIME or XHA	Hydraulic Limes HL	A blend of calcium hydroxide, calcium silicate and calcium aluminates (<i>and possibly other materials such as ash, fillers etc... N.D.R.</i>)

NOTES: Artificial hydraulic limes (HL) are not regulated in their overall composition and the presence of cement is almost certain. A more appropriate definition would have been HB (Hydraulic Binders) instead of HL. Should be avoided in restoration and conservation work. The addition permitted in NHL-Z of up to 20% of other materials in conjunction with the further allowances made in the Norm related to the presence of SO₃ (3% AND UP TO 7% subject to soundness test) and the small amount of Available Lime required in NHL products (3% -15%)* can cause problems. These additions will consist of cement or other materials (i.e. Gypsum) used in order to achieve constancy in the performance of otherwise unreliable products. Although in many instances this will be acceptable in new build, in restoration and conservation work.

NHL - Z products could produce unwanted effects.

* Available lime in St. Astier NHL products: from 20% to over 50%.

For further Guidance, contact your St Astier Distributor.

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