



## **STUDY of the SUB-SOILS**

It is a known fact that the sub-soils are divided into four categories gravel, sand, mud and clay and the proportion of each element varies according to the quality of the ground.

The grains of gravel have a diameter that oscillates between 6 and 20 mm  
those of sand, between 0.05 mm and 6 mm;  
those of mud, between 5 microns a 0.05 mm and  
those of clay, smaller than 5 microns.

In order to recognize the granulometric composition of the sub-soils, there are several methods.

You may use our File ANALYSIS of SOILS : Document N° 0210-102.doc (Spain)  
in order to have a detailed explanation of the methods used in laboratories as well as easy ones that can be made on the site.

**CLASSIFICATION of the GROUNDS  
according to TESTS**

**GENERAL CLASSIFICATION OF THE GRANULAR GROUND  
35 % or less through the sieve N° 200**

**GROUP A-1  
(fragments of stone, gravel and sand)**

Subgroup A-1a..... 50 % maxi go through the sieve N° 10  
30 % maxi goes through the sieve N° 40  
15 % maxi goes through the sieve N° 200  
Plasticity index: 6 maxi

Subgroup A-1b..... 50 % maxi go through the sieve N° 40  
25 % maxi goes through the sieve N° 200  
Plasticity index: 6 maxi

**GROUP A-3  
(thin sand)**

51 % mini goes through the sieve N° 40  
10 % maxi go through the sieve N° 200

**GROUP A-2  
(mud or clay, gravel and sand)**

35 % maxi goes through the sieve N° 200  
Plasticity index: 10 maxi

**DATA and CORRESPONDENCES**  
**between the A.S.T.M. and the A.F.N.O.R. norms**

	<b>A.S.T.M.</b>	<b>A.F.N.O.R.</b>
SIEVE size of the mesh	Nº 10 2,000 mm	Module 34 1,600 mm
SIEVE size of the mesh	Nº 40 0,420 mm	Module 27 0,400 mm
SIEVE size of the mesh	Nº 200 0,074 mm	Module 20 0,080 mm

**COMMON CLASSIFICATION in SPAIN**

0	to	0,05 mm	Dust - Flour - Filler	
0,05	to	2 mm	Thin sand	(arena fina)
2	to	5 mm	Thick sand	(arena gruesa).
7	to	15 mm	Petty chickpea	(garbancillo menudo)
15	to	25 mm	Common chickpea	(garbancillo común)
20	to	30 mm	Common little gravel	(gravilla común)
25	to	40 mm	Thick little gravel	(gravilla gruesa)
30	to	50 mm	Small gravel	(grava menuda)
40	to	60 mm	Medium gravel	(grava media)
50	to	80 mm	Thick gravel	(grava gruesa)

**Madame SIERRA RUBIO Concepción – P.D.G.**

Monsieur BRIDE Michel - Ingénieur Conseil

☒ Urbanización Prado de los Robles  
40500 - RIAZA - Espagne



Téléphone1 : 00 (34) 92 155 11 63



E-Mail : [hyperbrick@hyperbrick.com](mailto:hyperbrick@hyperbrick.com)



WEB : [www.hyperbrick.com](http://www.hyperbrick.com)