

# EXT-110

## Name GRINDOSONIC MK7

Material type  
**GRANULAR  
PITCH  
ELECTRODES  
LINING**

Utilization  
**R&D  
IN-PLANT  
LAB**

General description  
To calculate the thermal shock resistance of an electrode, several properties must be measured, such as its thermal conductivity (RDC-143), coefficient of thermal expansion (RDC-158), flexural strength (RDC-187) and elasticity modulus. A good combination of all these properties allows avoiding breakage of the blocks when the cold electrode is subjected to fast heating. Two methods exist for the evaluation of the brittleness of an electrode core: the static elasticity modulus, measured during the compressive strength test (RDC-144), and the dynamic elasticity modulus measured with the EXT-110 Grindosonic apparatus.

This measurement is a non-destructive test where the resonant frequency of a core sample with a 50 mm diameter and 130 mm length is measured and used for the calculation of the dynamic elasticity modulus in GPa according to a specific equation. Almost any sizes of prismatic samples can be measured with this equipment. Moreover, this test is a good indicator as to detect the presence of microcracks.

Standard Method:	ISO 18142
Measurement:	Dynamic Elasticity Modulus [GPa]
Sample:	Core Ø 50 x 130 mm
Process Time:	~ 1 minute
Installation:	Workbench
Dimensions (LxWxH):	31 x 29 x 10 cm
Weight:	7 kg
Electrical Property:	230 V 1/N/PE, 50 Hz 0.12 kW, 0.5 A
Database Connection:	No

### Additional Recommended Equipment:

Drilling machine (RDC-157 or RDC-179)  
Saw (RDC-140 or RDC-148)  
Weighing scale with an accuracy of 0.1 g  
Drying oven (min. temperature 180°C)

