

## **Cadalso de los Vidrios leucogranite: a worldwide building stone from Spain**

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Cadalso de los Vidrios leucogranite is extracted from the Sierra de Guadarrama (Spanish Central System), about 75 kilometers southwest of Madrid. "Cadalso" means "high place", the topography of Cadalso de los Vidrios village is dominated by the Peña Muñana, where there is an eighth century Arab watchtower built with leucogranite. "Vidrios" refers to glass factories that existed in Cadalso de los Vidrios from the late twelfth century. Today there are no glass factories and quarrying is an important industry, Cadalso de los Vidrios has three quarry zones, and many processing and carving workshops.

Cadalso de los Vidrios leucogranite is a fine-medium-grained, hypidiomorphic, equigranular leucogranite. There are many historical buildings built with this stone, including the archeological site of "La Mezquita" whose original mosque was built between the years 950 and 1012 and the Villena Palace which dates from the fifteenth century. In 1534, this was rebuilt into a Renaissance-style castle. In addition the "Arco de la Ermita de Santa Ana" was built between 1463 and 1492 and the Nuestra Señora de la Asunción Church was built in 1498 with its façade being completed in Plateresque-style in 1547 as the "Casa de los Salvajes". The Cadalso de los Vidrios City Hall was built in 1992 also with leucogranite.

The current annual production of the Cadalso de los Vidrios leucogranite is 8000 m<sup>3</sup>, of which 40% is exported primarily to France and Italy. Currently, under the trade name Blanco Cristal, it has been used in places such as Vieux-Port in Marseille, in France; Plaza Romagné Conflans in Ste Honorine (France); Cork International Airport, in Ireland; Terminal 4 of Adolfo Suarez Airport, in Madrid; shopping malls in Dortmund, Germany as well as in Guangzhou, China and the Puri EXIM Bank, in Jakarta.

Thermal shock cycles were performed during 24 hours according to the European standard UNE-EN, 14066, 2003 in 7 cubes of Blanco Cristal. First, the samples were put in an oven at 105±5° C for 18 hours, then immersed in water at room temperature for 6 hours. This cycle was repeated 42 times.

Surface hardness and colour has been measured before and after the thermal shock test to check variation in petrophysical properties due to thermal shock.