Roma, 28 April 2017

ANDIL, the **Italian Association of Clay Brick and Roof Tile Producers,** is reported as gathering about 66 companies in Italy, including not only large international groups, but also a large group of SMEs (98%). In Italy 116 factories, with more than 4,000 workers, produce different types of clay construction products in particular for residential building in its various forms (masonry, roofing, partition walls, veneers, flooring and horizontal structures). In 2015, only the Italian brick/tiles industry produced over 5.2 million tons, with a value of approx 400 mln EUR.

ANDIL is writing to you on behalf of the Italian clay industry to express its concerns regarding clay brick/block masonry requirements in the framework of the "Decree updating the new technical standards for buildings" namely "Norme Tecniche per le Costruzioni – NTC", notified to the European Commission.

During the reviewing period several pronouncements have been presented to the MIT (Italian Ministry of Infrastructures and Transports) by ANDIL, through the Federazione Confindustria Ceramica e Laterizi, to better improve the Code. Taking into account the importance of the topic, it is meant to express here "*the two critics*" that still remain:

1. **the heavy limitation of the use of "thin layer joints" for the masonry structures in seismic areas;**
2. **the alarming disorder regarding the definition of the "assembled" and "built at the construction site" types for the non-structural elements.**

(1) With reference to these specific issues, it is noted that even the "Explanatory report" prepared by MIT - to comment the Decree and to go deeper on the reasons of the changes introduced therein – does not explain, neither clarify, the heavy limitation and the confused definition.

In particular, the "Explanatory report" of the MIT highlights the introduction to § 4.5 of the "thin layer mortar bed joints (0.5 - 3 mm thickness) and / or unfilled perpend joints" and justifies its restricted use: "it is noted that the masonry built with unfilled perpend joints is present in the Eurocodes and national Annexes published after the D.M. 14/01/2008. However, taking into account that this type of masonry has a shear strength less than that realized with filled vertical joints, and the deformation capacity under seismic loads lower than those of the masonry with filled perpend joints, its use has been limited to low seismic areas for buildings up to 2 or 3 storeys, according to the seismic level."

It is, thus, explained the reason of the limitation of the solely masonry with the unfilled perpend joints, totally missing the explanation about the limitation of the thin layer bed joints.

In § 7.8, the limited use in low seismic areas - more accurately, for buildings characterized at the SLV (Life Safety Limit State) by $ag \cdot S \leq 0{,}15$ g - is also valid for thin layer mortar bed joints, without any explanations in the MIT report on this point!

The great problem that comes from this limitation is that if the masonry provides the mortar filled pocket (equivalent to ordinary masonry, as recognized by the new NTC) and the bed joint is thin, this system could be used only in areas with a hazard level minimum or low, that means useful just in a few Italian territories.

ANDIL Associazione Nazionale degli Industriali dei Laterizi
Via A.Torlonia 15 – 00161 ROMA - Tel 06/44236926 – Fax 06/44237930 – andil@laterizio.it – www.laterizio.it

After continuous recommendations to the MIT and all other competent Offices, the updated NTC text still includes these unacceptable penalties. Finally, considering the several experimental validations and effective demonstrations of good seismic behaviour of these systems during the recent Italian earthquakes, an intervention on the Decree becomes crucial.

On this point, ANDIL already reported the post-seismic reconnaissance of modern clay buildings in Emilia [2012] (*see Dossier IT*).

Since the Eurocodes allow the use of thin layer joints for the masonry structures, this kind of limitation drives to a deep market trade barrier.

(2) A further clarification is needed on the non-structural elements; in the MIT "Explanatory report" is highlighted at § 7.2.3 that "the tasks for each professional figure (structural designers, suppliers/technicians, site engineers) are defined, as far as anti-seismic design and installation of non-structural elements are concerned". Actually, it is all than a clarification.

It seems there is a deep confusion on definition of the "assembled" and "built at the construction site" types, by penalizing clay bricks/blocks in favour of precast systems. This must be read in addition to the dangerous consequences that could affect trade.

Thus, the amendments here below are required:

[...]

The President

ANDIL
00161 ROMA - Via A. Torlonia, 1

Template for comments

Date: 21/04/2017	Document: **BOZZA DI REVISIONE DELLE NORME TECNICHE PER LE COSTRUZIONI**	Project: TRIS/(2017) 00291 Notification: 2017/0043/I

ORGANIZATION[1]	Line number (e.g. 17)	Clause/ Subclause (e.g. 3.1)	Paragraph/ Figure/ Table/ (e.g. Table 1)	Type of comment[2]	Comments	Proposed change
ANDIL		**4.5.2.3 Masonry**	3rd paragraph	te	**Avoid the unjustified limitation in the use of thin layer joints**	*Change the sentence as follows:* The use of ~~thin mortar joints (0.5–3 mm thick) and/or~~ dry vertical joints should be limited to buildings with a quantity of storeys above the ground not exceeding that specified in § 7.8.1.2, and a maximum storey height of 3.5 m.
ANDIL		**7.2.3 Non structural elements**	4th paragraph - 2nd sentence	te	**It is evident an unjustified heavy limitation of the use of "thin layer joints" for the masonry structures in seismic areas**	*Delete the following text:* Quando l'elemento non strutturale è costruito in cantiere, è compito del progettista della struttura individuare la domanda e progettarne la capacità in accordo a formulazioni di comprovata validità ed è compito del direttore dei lavori verificarne la corretta esecuzione; quando invece l'elemento non strutturale è assemblato in cantiere, è compito del progettista della struttura individuare la domanda, è compito del fornitore e/o dell'installatore fornire elementi e sistemi di collegamento di capacità adeguata ed è compito del direttore dei lavori verificarne il corretto assemblaggio.
ANDIL		**7.8.1.2 Materials**	4th paragraph	te	**It notes the alarming disorder regarding the definition of the "assembled" and "built at the construction site" types for the non-structural elements.**	*Delete the following text:* L'uso di giunti sottili (spessore compreso tra 0.5 mm e 3 mm) è consentito esclusivamente per edifici caratterizzati allo SLV, da agS ≤0,15 g, con le seguenti limitazioni: - altezza massima, misurata in asse allo spessore della muratura: 10,5 m se agS ≤0,075 g; 7 m se 0,075 g<agS ≤0,15 g - numero dei piani in muratura da quota campagna: ≤ 3 per agS ≤0,075g ; ≤ 2 per 0,075g <agS ≤0,15g

1 **ORGANIZATION** that submits a contribution with its opinion on any given notification.

2 **Type of comment:** **ge** = general **te** = technical **ed** = editorial