ANNEX 18

Concretes for non-structural use

1. Scope

This Code lay down specific regulations for Structural Mass Concrete (HM), Structural Reinforced Concrete (HA) and Structural Prestressed Concrete (HP). This Annex also defines the scope and specifications to which concretes for non structural use are subject.

For the purposes of this Annex, concrete for non structural use are defined as concretes that do not add structural responsibility to the construction but contribute to improve the durable conditions of the structural concrete or add the necessary volume of a resistant material to provide the geometry required for a certain purpose. This type of concrete may be classified into two classes:

- Blinding Concrete (HL): The purpose of this concrete is to prevent structural concrete drying during pouring and also possible contamination during the first hours of concreting.
- Non Structural Concrete (HNE): Concrete with the purpose of configuring resistant material volumes. Examples include concretes for sidewalks, concretes for borders and concretes for filling.

The following sections of this Annex provide relevant specifications and recommendations for the effective application of these guidelines to concretes for non structural use.

2. Materials

2.1 Usable cements

The cements usable for these concrete types are shown in the following table:

Table A 18.1 Usable cements

USE	RECOMMENDED CEMENTS
Non-structural precast concrete	Common cements except CEM II/A-Q, CEM II/B-Q, CEM II/A-W, CEM II/B-W, CEM II/A-T, CEM II/B-T, CEM III/C
Blinding and filling of trenches concretes	Common cements
Other concretes produced in the site	Cement for special uses ESP VI1 and Common cements except CEM II/A-Q, CEM II/B-Q, CEM II/A-W, CEM II/B-W, CEM II/A-T, CEM II/B-T, CEM III/C.

2.2 Aggregates

For the manufacture of concrete for non-structural use, rolled sands and gravels or sands and gravels from crushed rocks or appropriate steel industry slag may be used.

Up to 100% of recycled coarse aggregate may be used for the manufacture of non-structural cement, provided it complies with the specific classifications laid down in Annex 15 of this Code.

If the affected performance of granulated slag from combustion in power stations has been demonstrated in accordance with article 28 of this Code, they may be used as aggregates provided they comply with the specifications laid down in the article for steelwork aggregates.

2.3 Admixtures

Concretes for non-structural use are characterised by their low cement content and it is therefore advisable to use water-reducing admixtures with the aim of reducing the porous structure of the concrete in its set state as far as possible.

3. Characteristics of concretes for non-structural use

3.1 Blinding Concrete (HL)

The only concrete usable for this application is designated as follows:

HL-150/C/TM

As indicated in the identification, the minimum cement dose shall be 150 kg/m^3.

It is advisable for the maximum aggregate size to be 30 mm with the aim of facilitating the workability of these concretes.

3.2 Non Structural Concrete (HNE)

The minimum characteristic strength of these types of non-structural concretes shall be 15 N/mm^2. Due to the low strength required of these concretes and consequent low cement contents, it does not appear necessary to among the requirements that the designation should contain any type of reference to the environment in accordance with Article 39.2. The designation of Non-Structural Concretes (NSCs) is therefore as follows:

HNE-15/C/TM

It is advisable for the maximum aggregate size to be less than 40 mm with the aim of facilitating the placing of these concretes.

For these concretes, it is necessary to follow the curing instructions indicated in section 71.6 of these Guidelines, particularly as applied to floors, sidewalks and concreted components with large exposed surfaces.

For these concretes, the component shall be inspected in accordance with Article 85 of this Code and a consistency inspection shall be carried out at least once daily or with the frequency laid down in the Special Technical Specifications or by the Work Management. Independently of this regulation Inspection, the Special Technical Specifications may lay down strength control n criteria for such concretes.