Operation Directions of Applying Accreditation for Building Precast Rate

1. The Ministry of the Interior (hereinafter as the "MOI") has established the Operation Directions herein with a view to promote precast construction in buildings in order to save labor, reduce construction time, enhance construction quality and ensure health and safety on construction sites.
2. Definitions:
   (1) Precast Construction: Construction in which the exterior wall, column, beam, floor slab, staircase and integrated bathroom in a building made of reinforced concrete (hereinafter as "RC") or steel reinforced concrete (hereinafter as "SRC") are cast or manufactured in a factory or construction site and then assembled on the final construction site.
   (2) Building Precast Rate: The sum of the precast rate of each component on above ground level such as exterior wall, column, beam, floor slab, staircase or bathroom multiplied by its respective weight ratio. The Building Precast Rate is classified into the Building Design Precast Rate and Building Completed Precast Rate, depending on the building's stage of construction.
   (3) Integrated bathroom: A bathroom module that carries the functions of a bath, toilet and sanitary facility and is assembled from walls, floor and ceiling that are entirely prefabricated.
   (4) Building Precast Rate Accreditation Report: The accreditation report is classified into the Design Building Precast Rate (hereinafter as the "Design Accreditation Report") and the Building Completed Precast Rate (hereinafter as the "Completed Accreditation Report") and is issued by the Building Precast Rate Evaluation Organization (hereinafter as the "EO") designated by the MOI.
   (5) Applicant: The builder as registered on the building permit of a building or the permit document of a special building.

(6) Designer: The architect of a building.

(7) Building Precast Rate Evaluation Manual: A manual published by the MOI Architecture and Building Research Institute for the evaluation of Building Precast Rate.

(8) Evaluation Committee: An evaluation committee, which has an established list of experts and academics and is formed with members thereof as per the actual number of persons required by each application, assembled by the EO in accordance with the "Operation Directions for the Accreditation of Building Precast Rate for Evaluation Organizations".

3. The scope of accreditation herein is limited to newly constructed buildings listed in the building permit as RC or SRC structures.

4. The classification of Building Precast Rate levels is as follows:

(1) Level 1: A Building Precast Rate of 70% or above.

(2) Level 2: A Building Precast Rate of 45% or above and under 70%.

(3) Level 3: A Building Precast Rate of 20% or above and under 45%.

The preceding Building Precast Rate is calculated as per the appendix.

5. To apply for the Design Accreditation Report, the following documents are required to be submitted to the EO for evaluation:

(1) Application Form.

(2) Photocopy of registration, establishment or identification documents of the Applicant.

(3) An affidavit signed by the Applicant and Designer.

(4) Photocopy of the building permit.

(5) Basic drawings of the building.

(6) Project summary sheet of precast construction in the building.

(7) Calculations of the Building Design Precast Rate and related drawings and documents.

(8) Other documents listed in the Building Precast Rate Evaluation Manual.

6. Upon accepting an application submitted per Article 5 herein, the EO shall complete the evaluation in fifty days and issue the Design Accreditation Report.

Where rectification is required per Article 5 herein, the EO shall notify the

Applicant in writing to do so within thirty days from receipt of such notice; if unable to do so, the Applicant may apply for an extension by submitting explanatory documents before the deadline, and the extension is thirty days maximum and limited to once. An application where the required rectification has not been submitted or completed before the deadline shall be rejected. The time required for the Applicant to rectify the application or the extension period does not count toward the evaluation time.

7. The calculation of the Building Design Precast Rate and the evaluation of the Building Precast Rate and Level shall be undertaken in accordance with the Operation Directions herein and the Building Precast Rate Evaluation Manual.

8. The Design Accreditation Report shall clearly specify the following items:

(1) Number of the Design Accreditation Report and the accreditation date.

(2) Name of the EO and names and signatures of its legal representative and members of the Evaluation Committee.

(3) Building permit number.

(4) Project summary sheet of precast construction in the building and design drawings.

(5) Evaluation results of the Building Design Precast Rate and Level.

(6) Minutes of the evaluation meeting(s).

(7) The date of publication of the applicable Operation Directions herein and applicable version of the Building Precast Rate Evaluation Manual.

(8) Other supplementary information.

9. A building that has obtained the Design Accreditation Report but has undergone design alterations that affect the Building Precast Rate Level may apply to the EO for re-accreditation.

Regarding the preceding application for re-accreditation, a summary table of differences after alterations and drawings before and after the alterations shall also be submitted in addition to the documents referred to in Article 5.

The differences after alterations specified in the preceding paragraph refer to differences between the post-alteration building versus the project summary sheet of precast construction and the design drawings as documented in the

Design Accreditation Report.

Article 6 is applicable to the reevaluation period for the EO to process the case referred to in Paragraph 1 herein.

Article 7 is applicable to the calculation of the Building Design Precast Rate and evaluation of the Building Precast Rate and Level for the reevaluation of the case referred to in Paragraph 1 herein.

10. For processing of a case in Article 5 or Article 9, the EO may convene members of the Evaluation Committee and the Applicant for a joint onsite review while the building is under construction.

11. To apply for the Completed Accreditation Report, the following documents shall be submitted to the EO upon construction completion:

(1) Application.

(2) Photocopy of registration, establishment or identification documents of the Applicant.

(3) An affidavit signed by the Applicant and Designer.

(4) Photocopy of the building permit.

(5) Basic drawings of the building.

(6) Project summary sheet of precast construction of the building.

(7) Calculations of the Building Completed Precast Rate and related drawings and documents.

(8) Records related to the completed precast construction.

(9) Summary table of the differences after alterations.

(10) Other documents listed in the Building Precast Rate Evaluation Manual.

12. For the evaluation period for processing a case in Article 11, the EO may apply Article 6 in completing the evaluation and issuing the Completed Accreditation Report.

The evaluation for an application filed in accordance with Article 9, which has obtained a Design Accreditation Report upon reevaluation, shall be completed and the Completed Accreditation Report shall be issued within twenty-five days.

13. The calculation of the Building Completed Precast Rate and the evaluation of the Building Precast Rate and Level shall be undertaken in accordance with the

applicable Operation Directions herein and Building Precast Rate Evaluation Manual as listed in the Design Accreditation Report.

14. The Completed Accreditation Report shall clearly specify the following items:
    (1) Number of the Completed Accreditation Report and the accreditation date.
    (2) Numbers of all the Design Accreditation Reports and their respective accreditation dates.
    (3) Name of the EO and names and signatures of its legal representative and members of the Evaluation Committee.
    (4) Building permit number.
    (5) Project summary sheet of the completed precast construction and as-built drawings of the building.
    (6) Evaluation results of the Building Completed Precast Rate and Level.
    (7) Minutes of the evaluation meeting(s).
    (8) The date of publication of the applicable Operation Directions herein and applicable version of the Building Precast Rate Evaluation Manual.
    (9) Other supplementary information.
15. Where the Building Precast Rate Accreditation Report has been lost or damaged, the Applicant may apply to the EO for replacement by submitting a description of the cause.
16. Should any of the following situations occur, the EO may rescind a previously-issued Building Precast Rate Accreditation Report:
    (1) The building permit has been annulled or rescinded by the competent municipal authority.
    (2) The application documents have been judged by the court to be forged documents.
    (3) Submission of false information or proof.
17. The Evaluation Committee of the EO may deliberate conclusions on items not stipulated in the Building Precast Rate Evaluation Manual and submit to the MOI for approval.

Appendix

Formula for Building Precast Rate

1. Building Precast Rate P = $(0.25\times P_W+0.2\times P_C+0.35\times P_B+0.15\times P_F+0.05\times P_S)\times 100\%$, with the percentage rounded to the second decimal places,

where

P_W (Exterior wall precast rate) =

$$\frac{\text{Accumulated \& } adjusted\ length\ of\ centerlines\ of \text{ precast exterior walls projected onto the floor (including precast roof parapets) on above ground level}}{\text{Total length of centerlines of exterior walls projected onto the floor (including roof parapets) on above ground level}}$$

, or the ratio of the Accumulated & adjusted length of centerlines of precast exterior walls projected onto the floor (including precast roof parapets) above ground level, to the Total length of centerlines of all exterior walls projected onto the floor (including roof parapets) above ground level, in a newly constructed building under the same building permit.

P_C (Column precast rate) = $\frac{\text{Accumulated vertical length of centerlines of precast columns on above ground level}}{\text{Total vertical length of centerlines of all columns on above ground level}}$, or the ratio of the Accumulated vertical length of centerlines of precast columns above ground level, to the Total vertical length of centerlines of all columns above ground level, in a newly constructed building under the same building permit.

P_B (Beam precast rate) = $\frac{\text{Accumulated length of centerlines of precast beams projected onto the floor on above ground level}}{\text{Total length of centerlines of all beams projected onto the floor on above ground level}}$, or the ratio of the Accumulated length of centerlines of precast beams projected onto the

floor plan on above ground level, to the Total length of centerlines of all beams projected onto the floor plan on above ground level, in a newly constructed building under the same building permit.

P_F (Floor slab precast rate) =

$\frac{\text{Accumulated horizontal projected area of precast floor slabs (including precast balcony slabs)on above ground level}}{\text{Total horizontal projected area of floor slabs (including balcony slabs)on above ground level}}$, or the ratio of the Accumulated horizontal projected area of precast floor slabs (including precast balcony slabs) above ground level, to the Total horizontal projected area of all floor slabs (including balcony slabs) above ground level, in a newly constructed building under the same building permit.

P_S (Staircase & bathroom precast rate) =

$\frac{\text{Accumulated number of precast staircases (set) and integrated bathrooms (set) on above ground level}}{\text{Total number of staircases (set) and bathrooms (set) on above ground level}}$, or the ratio of the Accumulated number of precast staircases (set) and integrated bathrooms (set) on above ground level, to the Total number of all staircases (set) and bathrooms (set) on above ground level, in a newly constructed building under the same building permit.

2. When calculating the Building Precast Rate, the same type of component in a newly constructed building under the same building permit shall be combined.