



भारतीय राष्ट्रीय राजमार्ग प्राधिकरण

(सड़क परिवहन और राजमार्ग मंत्रालय, भारत सरकार)

National Highways Authority of India

(Ministry of Road Transport and Highways, Government of India)

जी-5 एवं 6, सेक्टर-10, द्वारका, नई दिल्ली - 110 075 • G-5 & 6, Sector-10, Dwarka, New Delhi-110075

दूरभाष/Phone : 91-11-25074100 / 25074200



भाराराप्रा/नीति दिशानिर्देश/प्रौद्योगिकी समावेश प्रकोष्ठ/2026
नीति परिपत्र सं. 13.28/ 2026 दिनांक 17th अगस्त, 2026

{ई-ऑफिस फाइल सं. SRD-TI-11019/13/2026-SRD-TI (कम्प्यूटर सं. 320775 पर लिया गया निर्णय)}

NHAI/ Policy Guidelines/ Technology Induction Cell /2026

Policy Circular No. 13.28/ 2026 dated 17th August, 2026

{(Decision taken on E-Office File No. SRD-TI-11019/13/2026-SRD-TI (Comp No. 320775))}

विषय: राष्ट्रीय राजमार्ग परियोजनाओं में औद्योगिक प्रीकास्ट कंक्रीट तत्वों के उपयोग के लाभ और प्रीकास्ट कंक्रीट घटक के अनिवार्य उपयोग के संबंध में।

Sub: Benefits of Use of Industrialized Pre-cast Concrete Elements & Mandatory Use of Precast Concrete Component in NH Projects -reg:-

संदर्भ: (i) सड़क परिवहन और राजमार्ग मंत्रालय परिपत्र संख्या आरडबल्यू/एनएच-34049/01/2020-एस एंड आर (बी) दिनांक 15.06.2023

(ii) सड़क परिवहन और राजमार्ग मंत्रालय परिपत्र संख्या परिपत्र संख्या आरडबल्यू/ एनएच-34049/01/2020-एस एंड आर (बी) दिनांक 24.06.2025

Ref: (i) MoRT&H Circular no. RW/NH-34049/01/2020-S&R (B) dated 15.06.2023

(ii) MoRT&H Circular no. RW/NH-34049/01/2020-S&R (B) dated 24.06.2025

सड़क परिवहन और राजमार्ग मंत्रालय ने संदर्भित पत्रों के माध्यम से राष्ट्रीय राजमार्ग परियोजनाओं में औद्योगिक प्रीकास्ट कंक्रीट तत्वों के उपयोग के लाभ और प्रीकास्ट कंक्रीट घटक के अनिवार्य उपयोग को जारी किया है। इसकी प्रति सूचना और आवश्यक कार्रवाई के लिए **संलग्न** है।

Ministry of Road Transport & Highways (MoRT&H) vide letters under reference has issued Benefits of Use of Industrialized Pre-cast Concrete Elements & Mandatory use of Precast Concrete component in NH Projects. The copy of the same is **enclosed** herewith for information and needful action.

2. अनुरोध है कि परिपत्र की विषयवस्तु को तत्काल आवश्यक अनुपालन हेतु सभी संबंधितों के संज्ञान में लाया जाए।

It is requested that the contents of the Circular may be brought to the notice of all concerned for immediate needful compliance.

3. यह सक्षम प्राधिकारी के अनुमोदन से जारी किया जाता है।

This issues with the approval of Competent Authority.

संलग्नक: यथोपरी।

Encl.: As stated above.

(सीएस. संजय कुमार पटेल/ CS. Sanjay Kumar Patel)

प्रभारी मुख्य महाप्रबंधक(समन्वय) (i/c) Chief General Manager (Coord.)

प्रति/ To:

भाराराप्रा मुख्यालय/आरओ/पीआईयू/सीएमयू/साइट कार्यालयों के सभी अधिकारी।

All Officers of NHAI HQ/ ROs/ PIUs/ CMUs/ Site Offices.

प्रतिलिपि/ Copy to:

1. पुस्तकालय की साइट पर प्रकाशन के लिए पुस्तकालय को।
Library for hosting the Circular on Library site.

2. परिचालन के लिए वेब एडमिन को।
Web Admin for Circulation.

3. सचिव, सड़क परिवहन और राजमार्ग मंत्रालय के प्रधान निजी सचिव को सूचनाार्थ।
PPS to Secretary, MoRT&H for Kind Information.

Handwritten signature and date 17/08/26

File No.RW/NH-34049/01/2020-S&R (B)
Government of India
Ministry of Road Transport & Highways
(S&R (P&B/New Technology) Zone)
Transport Bhawan, 1, Parliament Street, New Delhi-110001

Dated: 15th June, 2023

OFFICE MEMORANDUM

Subject: - Benefits of Use of Industrialised Pre-cast Concrete Elements in NH Projects - Reg

Madam/Sir,

Ministry of Road Transport and Highways has issued Policy Circular No. File No.RW/NH-34049/01/2020-S&R (B) dated 8th April 2022 regarding National Highway Pre-cast Concrete Policy.

2. Industrialised Pre-cast Concrete (factory manufactured pre-cast concrete elements) has the benefits of all-weather and fast construction, reliable quality & enhanced performance durability, aesthetics due to uniformity in appearance and minimum user time delay/reduced carbon emission/reduced noise & air pollution due to reduced construction activities at site, etc. To add to that, it will also play an integral role in accelerating the growth of the MSME sector. The benefits of industrialised pre-cast concrete units are detailed in Annexure-I.

3. Mandatory use of industrialised pre-cast concrete elements in NH projects is under consideration of Govt. The construction firms working in NH projects are however encouraged to use industrialised pre-cast concrete elements in their projects considering the benefits detailed in Annexure-I. This will in the long run be beneficial to all stakeholders. It is requested to kindly circulate among members of National Highway Builders Federation (NHBF) and develop own benchmarks for its wider adoption.

Enclosure: As above.

Yours sincerely,
Bidur Kant Jha
5/06/2023.
(Bidur Kant Jha)
Director (New Technology for Highway development)
For DG (RD) & SS

To

1. National Highway Builders Federation(NHBF)

Copy to:

1. The Principal Secretaries/Secretaries of State PWDs/RCDs
2. The Chairman, National Highways Authority of India, G-5 & 6, Sector-10, Dwarka, New Delhi-110 075. (with a kind request to host on NHAI's Website)
3. The Managing Director, NHIDCL, PTI Building, New Delhi-110001. (with a kind request to host on NHIDCL's Website)
4. All ROs of MoRT&H
5. Sr. PPS to Secretary (RT&H)
6. Sr. PPS to DG (RD) & SS



7. PPS to all ADGs/CEs
8. NIC-for uploading on Ministry's website under "What's new"

BENEFITS OF USE OF INDUSTRIALISED PRE-CAST CONCRETE ELEMENTS IN NH PROJECTS

1. INTRODUCTION:

Pre-cast Concrete Construction has the benefits of all-weather and fast construction, reliable quality & enhanced performance durability, aesthetics due to uniformity in appearance and minimum user time delay/reduced carbon emission/reduced noise & air pollution due to reduced construction activities at site, etc. Ministry has issued National Pre-cast Concrete Policy on 08th April 2022. Salient points of the Circular are as under:

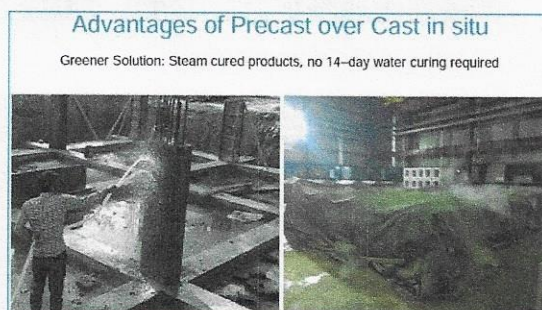
- Contract/Concession agreement document shall include the provision of mandatory use of factory manufactured pre-cast concrete elements in projects within 100 km radius of Pre-cast factory. The minimum mandatory usage should be 25% of total concrete volume other than the foundations & sub-structures of Bridges/Viaduct/RoB. Any relaxation may be granted by Authority only if the contractor/concessionaire is able to demonstrate that the manufacturer(s) is not able to provide such products matching to the works programme of the contractor or the prices demanded by the manufacturer is more than the prices derived for cast-in-situ condition at the rates of SoR prevailing on 28th days before the bid due date.
- The pre-cast factory shall have minimum facility of fully automatic RMC plant for better quality, arrangement for steam curing, mechanical handling of concrete and pre-cast components, bar bending machines, stacking yard, in-house design team and NABL accredited quality control laboratory, RO plant for water purification etc.
- Certification of Pre-cast concrete factory from Quality Council of India (QCI)/RDSO/NCCBM.

2. BENEFITS OF PRE-CAST CONCRETE CONSTRUCTION:

- All-weather and fast construction more particularly in high rainfall, flood prone regions

and regions with extreme climatic conditions such as Ladkhakh/Leh that provide short window of construction period, Let-Wing Extremists (LWE) affected States, zero aggregate States such as Tripura or States having longer carriage distance for aggregates

- Reliable quality & enhanced performance durability

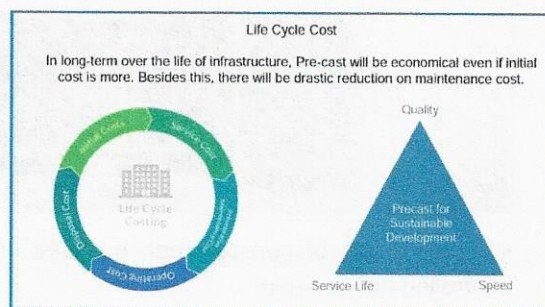


- Aesthetics due to uniformity in appearance



- Minimum user time delay/reduced car emission/reduced noise & air pollution due to reduced construction activities at site

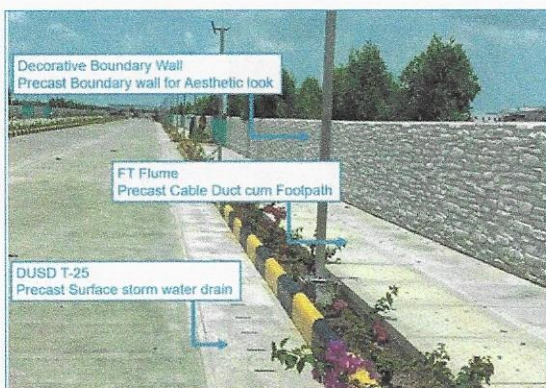
- Reduces Capital Cost and Life Cycle Cost



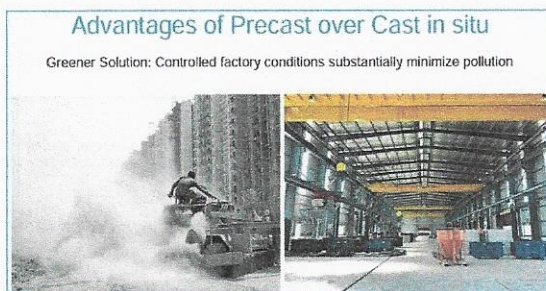
- Error minimization due to comprehensive planning, and rigorous process control
- Better Geometry Control with high precision



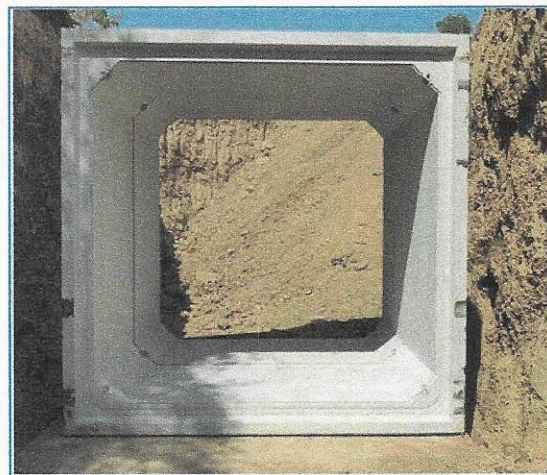
- Aesthetically more pleasing



- Construction risk/accident reduces significantly due to reduction in in-situ work
- Effective usage of construction materials – much less wastage compared to in-situ works
- Repetitive use of formwork
- Waste generated on site reduced significantly - reduces air & noise pollution and contamination of water bodies.



- Higher grade of concrete can be used under controlled environment
- Thin section requiring lesser raw material



- Helps in regeneration of innovative concrete technology like Ultra High Performance Concrete and Geo-polymer Concrete
- Design can be optimized since the factor of safety for the poor workmanship and manipulation of materials on site can be reduced
- On-site theft and vandalism can be avoided

EFile No.RW/NH-34049/01/2020-S&R (B) (Computer No.-182692)

Government of India

Ministry of Road Transport & Highways
(S&R (P&B/New Technology) Zone)

1970.12

Transport Bhawan, 1, Parliament Street, New Delhi-110001

Dated: 24th June, 2025CIRCULAR

To

1. The Chief Secretaries of all the State Governments/ UTs.
2. The Principal Secretaries/ Secretaries of all States/ UTs Public Works Department/ Road Construction Department/ Highways Department (dealing with National Highways and other centrally sponsored schemes).
3. The Chairman, National Highways Authority of India, G-5 & 6, Sector-10, Dwarka, New Delhi-110 075.
4. The Managing Director, NHIDCL, World Trade Centre, New Delhi-110029.
5. The Director General (Border Roads), Seema Sadak Bhawan, Ring Road, New Delhi-110 010.
6. All Engineers-in-Chief and Chief Engineers of Public Works Department of States/ UTs/ Road Construction Department/ Highways Departments (dealing with National Highways and other centrally sponsored schemes).
7. The Secretary General, Indian Roads Congress
8. The Director, IAHE, Noida, UP.
9. All CE-ROs, ROs and ELOs of the Ministry.

Subject: - Mandatory Use of Precast Concrete Components in National Highways Projects - Reg.

Ref: i) File No.RW/NH-34049/01/2020-S&R (B) dated 08.04.2022

Madam/Sir,

Ministry has issued 'National Highway Precast Concrete Policy' cited under reference. Need was felt to accelerate the use of precast concrete components to harness the benefits of precast technology in construction of National Highways, Expressways & Other Centrally Sponsored Road Projects. Use of Precast concrete elements in built-up area/urban municipal limits has several benefits such as reduced pollution, minimise user time delay, etc. In view of the same, following policy decisions have been taken:

2. Schedule 'B' or Schedule 'C' of the Contract Agreement for projects costing more than Rs. 300 crore (civil cost) shall have the provision of mandatory use of precast concrete components (may be either factory-made or precast at project site, in contractor's own casting yard). The schedules should also specify the drawings, specifications and the relevant standards as applicable for each element.
3. The contractor may be allowed to use the factory made precast elements subject to proper quality certification by the factory as per legal norms of the industry or be allowed to cast in the yard at site in accordance with the agreement. Authority Engineer/Independent Engineer of the Project shall approve the factory after duly inspection.
4. The use of precast concrete elements should initially be taken up for non-critical components of highway projects with total civil cost of over Rs 300 crore on mandatory basis. The main structures such as bridges and pavement should be only in accordance

with the specifications of the contract agreement. The identified items/finished products which shall be mandatorily precast concrete (PCC/RCC/PSC as applicable) are as under:

- i. Box Culverts of specified sizes
- ii. Storm Water Drain cum footpath
- iii. Chute drain with dissipation chamber
- iv. Boundary wall/Toe Wall/fence
- v. RCC Crash Barrier/RS Wall Friction Slab-cum-Crash Barrier
- vi. Kerbs/Channels
- vii. Pedestrian Railing/Median Railing

The proposal for sanction should accompany the sheet showing the extent of usage of precast elements mentioned above estimated in terms of amount, quantity in specified units and percentage of total quantity and amount proposed in the project.

5. Design, fabrication/casting and launching/installation of pre-cast concrete components will be done as per relevant IRC/BIS standards/guidelines/codes such as IRC: 112/IRC: 122/IS: 456/IS: 15916 furthermore taking into consideration expected handling/lifting stresses, etc. Any international guidelines such as AASHTO, FHWA (Accelerated Bridge Construction Guidelines), Japan codes, American Precast concrete Association (PCA), World Roads Congress, Euro/British/ French/Swiss/German, etc., may be followed in case of any gaps in IRC/BIS standards/ guidelines/codes till such time IRC/BIS guidelines are developed.

6. Design & Drawings of the proposed pre-cast concrete components shall be checked & approved by the AE/IE's of the Project. Any clarification sought by Engineer shall be obtained by the Contractor from the manufacturer and submit to Engineer for his satisfaction. AE/IE shall also conduct review of quality control documents in respect of factory manufactured materials/finished products, etc. as per IRC:SP:112. The precast concrete components shall be produced in accordance with the approved drawings.

7. Standardization of design/drawings/construction methodology of precast concrete components (whether procured from precast factory/contractor's own casting yard) is the key for its wider adoption and to take advantage of volumes and repetitive use of molds. Therefore, It is beneficial to keep the sizes of different precast concrete components as uniform as possible. All executing Agencies should maintain the as-design and as-built drawings and construction methodology for all such elements as repository in Data Lake of NHA for record and reference. The details (including quantity and names of manufacturers) of the ex-situ pre-cast elements used and a quality review on standardised parameters shall be uploaded on the Datalake of NHA for reference.

8. DPR should be prepared considering factory manufactured concrete for the identified components and accordingly rate analysis and cost should be estimated. In case of any gaps in rate of items, CPWD/Delhi Schedule of Rates may be followed.

9. Quality Assurance & Quality Control and Testing should be done as specified in NHA Policy Circular dated 20th February 2025 and IS: 15916 including at the manufacturers facilities in case of ex-situ pre-cast elements.

10. Minimum facilities, Certifications protocol and Quality Control & Quality Assurance for Off-Site Manufacturing of Precast Concrete Components are given in **Annexure-1**, which shall be scrupulously followed to ensure quality of products. Certification shall not be required for pre-casting being done at Project site.

11. This circular shall be made applicable for the new projects for which bids are received 90 days after the issue of this circular.

12. It is requested that the contents of the circular may be brought into the notice of all concerned for needful compliance.

13. This issues with the approval of the Competent Authority.

Yours sincerely,

Bidur Kant Jha
24/06/2025

(Bidur Kant Jha)

Director

(New Technology for Highway development)

For DG (RD) & SS

Copy to:

1. All CEs in the Ministry of Road Transport & Highways
2. All ROs of the Ministry of Road Transport & Highways
3. All CE(NH) of PWD/R&B dealing with National Highways
4. Technical circular file of S&R (P&B) Section
5. NIC-for uploading on Ministry's website under "What's new" & "Comprehensive Compendium Circulars with CODE 1970.12.

Copy for kind information to:

1. PS to Hon'ble Minister (RT&H)
2. PS to Hon'ble MOS (RT&H)
3. Sr. PPS to Secretary (RT&H)
4. Sr. PPS to DG (RD) & SS
5. Sr. PPS/ PPS to Addl. Secretary (Road Safety)/ Addl. Secretary (RT&H & LA)
6. Sr. PPS/ PPS to AS&FA
7. Sr. PPS/ PPS to all ADG (KB)/ ADG(SC)/ ADG(RS)
8. Sr. PPS/ PPS to JS (RT&MVL)/ JS (EIC) / JS (Logistics)/ JS (NHIDCL)

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Annexure-1

Minimum Facilities, Certification and QA&QC for Off-Site Manufacturing of Precast Concrete Components**DEFINITIONS:****BIS 15916:2020 as per Clause 11.1.2 Manufacture**

The Manufacture of the Components can be done in a factory for the Commercial production established at the focal point based on the market potential or in a site Pre-casting yard set up at or near the site of work.

BIS 15916:2020 As per Clause 11.1.2.1 Factory prefabrication

Factory prefabrication is resorted to in a factory for the commercial production for the manufacture of standardized components on a long term basis. It is a capital intensive production where work is done throughout the year preferably under a closed shed to avoid effects of seasonal variations. High level of mechanization can always be introduced in this system where the work can be organized in a factory-like manner with the help of a constant team of workmen.

BIS 15916:2020 As Per Clause 11.1.2.2 Site prefabrication

In this scheme, prefabricated components are produced at site or as near the site of work as possible.

This system is normally adopted for a specific job order of large scale that will continue over a long period. This option provides definite economy with respect to cost of transportation thereby improving productivity. Even though temporary, the factory established should be comparable to high capacity permanent factory with equivalent state-of-the-art degree of mechanization and quality control. Under this category there are two types, that is, semi-mechanized and fully-mechanized.

a) Semi-mechanized — The work is normally carried out in open space with locally available labour force or skilled labour force depending on project complexity. The equipment/machinery used may be minor in nature and moulds are of mobile or stationary in nature.

b) Fully-mechanized — The work is carried out under a shed with skilled labour. The equipment used is similar to those of factory production. This type of precast yard will be set up for the production of precast components of high quality with a high rate of production.

- i. The Precast Manufacturing Facility shall have the following facilities:
 - Fully automatic RMC plant duly certified by BIS/QCI/ RCMA(Ready Mixed Concrete Manufacturers Association)
 - MS Moulds duly designed & inspected for Product Tolerances prescribed as per methodology approved in BIS 15916
 - Arrangement for steam curing,
 - Mechanical handling of Concrete and Pre-cast components,
 - Bar bending machines,
 - Stacking yard for Raw material, Stores Finished Goods, with OH Cranes of adequate facilities
 - Water Treatment Plant & RO plant for water purification

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- Recycling of Water Aggregates
- ii. Precast factory shall have well-equipped laboratory at factory itself for internal quality control. Laboratory shall have ISO: 17025 "General requirements for the competence of testing and calibration laboratories" certification granted by NABL or other approved certification bodies (CBs) However, such certification shall not be insisted upon for Project site laboratory. Each equipment shall have valid calibration certificate. The laboratory shall be manned by a Quality Manager with min 10 yrs of experience, Inspectors of Concrete, REbars, Formwork & Safety with min 3 years' experience.
- iii. The factory shall carry out Quality Control Tests on the Materials, Processes and Works to the frequency stipulated in Project's Specification with digitalisation of QC Process.
- iv. Precast Concrete Factory shall employ a third-party PMC for QA&QC for the supervision of daily activities/testing conducted at the factory. All the tests shall be witnessed by the personnel of the PMC & recorded using digitalisation of QC Process.
- v. PMC/AE/IE will do surprise check & audit the plant & its process as and when required by Authority.
- vi. Precast factory shall have following valid certifications granted by BIS/QCI/other approved CBs:
 - ISO 9001:2015 Quality Management System
 - ISO 14001:2015 Environmental Management System
 - ISO 45001:2018 Occupational Health & Safety Management System
- vii. Precast Concrete Factory shall have also valid products certification along with license for ISI label marking on the precast concrete components by BIS. This is applicable only for the products for which BIS does the certification.
- viii. On each of the precast concrete components bar code/QR code should also be engraved for traceability of lot, other QA&QC tests, etc.
- ix. Manufacturers Test Certificate for each lot of the products shall be provided by Precast Concrete factory, which shall be submitted by the Contractor along with bills.
- x. Plant also must have a Skill training facility for Interns in the Plant based on capacity of plant.
- xi. Contractor/Concessionaire to satisfy himself about the quality of products as per relevant IRC specifications/BIS standards & comments on quality of products shall be hoisted on Data Lake of MoRT&H/NHAI for wider information to avoid recurrent/frequent tests of products by individual contractors on each occasion/order. Product quality certification shall be by the user himself.

Bidur Kant Jha,

