

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
15/06/2023
(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

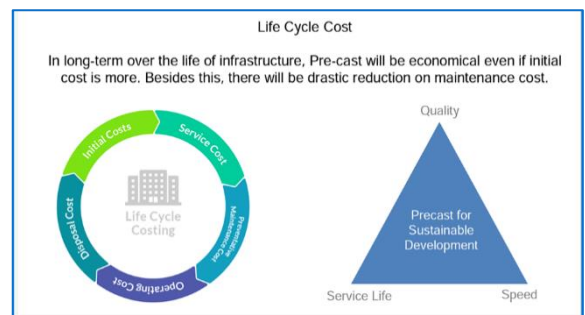


- Aesthetics due to uniformity in appearance



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

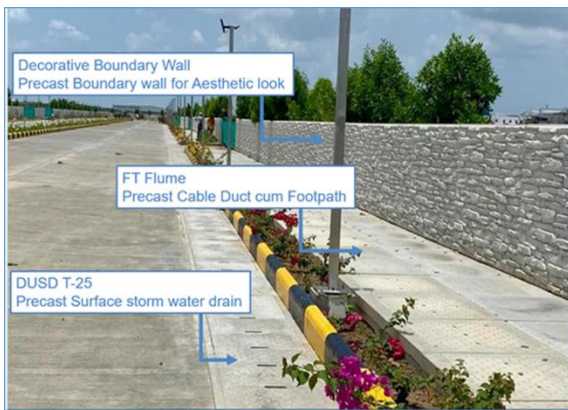
- Reduces Capital Cost and Life Cycle Cost



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



- Aesthetically more pleasing



- 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

- 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