

The Flooring Requirement

All types of engineering workshops, production units and storage facilities need a durable & dependable shopfloor which should sustain day-to-day wear & tear of abrasion, erosion, impact and spillages. It should suffice for good work efficiency through ease of floor maneuvering with least obstruction by offering a smooth and levelled floor. The floor should be easy to clean by moping or washing and at the same time must be safe for workers i.e., a slip-resistant walkable substrate having better visibility. Along with this, it must also have long-term foundation stability in the given topography by sustaining soil settlement and blocking moisture rise.

There comes the need for resinous floor toppings and underlays which can provide durability to an already placed strong and levelled floor. A variety of materials has already found its place in the said context belonging to different chemistries and having its own advantage over another. Some of the popular systems are, Epoxy & Polyurethane top coats, underlays and Hybrid formulations like, EPU, PU Concrete, etc. and Acrylate based outdoor formulations for pavement marking.

Special Floor Coatings

Apart from a standard resinous flooring which provides better mechanical strength, there are specific floors which ask for special properties, such as,

Resin Flooring with Electrical

Properties- Some floorings ask for controlled electrical resistance which shall qualify the substrate as Electrostatically Dissipative Floor (having electrical resistance from 10^4 to 10^9 Ohms) or Insulating Floor with a high Break-down

Voltage (6.6 to 33 kV) and Volume Resistivity

Resin Flooring with Chemical Resistant Properties- Some floors subjected to aggressive Chemicals (Acid or Alkali) or Solvents ask for special grade of polymers like, Novolac or Vinyl Ester based formulations with appropriate fillers

Resin Flooring with Hygiene Properties- Water based Epoxy or PU

Resin Flooring with Fire Resistant Properties- Resins tested to UL Standards for fire resistance

Bird's-eye view on the Floor Coating Market

Global - \$7.9 Billion (2021) and projected to reach \$13.5 billion by 2031 (As per Allied market research).

India - approx. Rs.800 Cr. in 2023 and expected to grow at a CAGR of 11-13%.

Some sectors which have adopted resinous floorings are:

- Automobiles
- Auto components
- White goods
- FMCG
- Heavy & Light Engineering
- Food & Beverages
- Car Park
- Pharma & HealthCare
- Hospitals & Clinics
- Decorative & Sports floors
- Airports
- Defense

Challenges for Indian Resinous Industrial Flooring Industry can be stated as:

Awareness to users on the importance of floor usability and durability, resulting in a lower life cycle cost. Along with the other important factors like, enhancement of aesthetics, safety and housekeeping is something which the shopfloor user



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needs to be conveyed and convinced.

Lack of standard specification for floor coatings in Indian market based on service conditions. For example, as compared to the European FeRFA which guidelines for all types of resinous floorings, we have IS:9197-79 (Reaffirmed in 2022) which pertains to Epoxy Resin Compositions only. The minimum acceptable strength (80 N / mm²) of the specification as compared to the prevalent substrate strength/s seems to be unreasonably higher and the Coefficient of Linear Thermal Expansion unreasonably relaxed (45×10^{-6} mm / mm°C).



Indian industry's short-term attraction to low-cost materials.

Non-adherence to adequate application procedure and equipment, leading to non-performance of good quality products.

Lack of proper trained application professionals, which could be attributed to unavailability of any formal training center in spite of availability of good technology, can be considered as few reasons impeding the growth and reliability of systems related to civil construction of floorings.

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Properties / Resins	EPOXY	POLYURETHANE	ACRYLATE
Strength	High	Moderate	Low
Abrasion Resistance	Low	High	Moderate
Temperature Stability	Moderate	High	Moderate
Impact Stability	Moderate	Moderate	Moderate
Finish	Glossy	Matt	Semi-glossy
Utility	Indoors	Indoors	Indoors / Outdoors
Housekeeping	Excellent	Excellent	Excellent
Chemical Resistance	Good	Good	Good
Colour Choice	Wide Choice	Wide Choice	Bright Colours