

Installation Guide

Permeable Infrastructure for Pedestrian Routes

1. Scope of Application

Flexus AP-Series is intended for architectural-grade permeable infrastructure defined by curated aggregate selection, controlled palette, and elevated surface finish including:

- Botanical gardens
- Zoo pathways
- Courtyards and campus circulation
- Nature preserves

Flexus AP-Series is not designed for vehicular traffic, emergency vehicle loading, or structural pavement applications unless specifically engineered.

2. System Overview

Flexus is a poured-in-place permeable surface composed of:

- Washed specialty aggregate
- Colored recycled SBR rubber granules
- Two-component polyurethane binder

Installed over a properly prepared aggregate base.

Standard thicknesses:

Model	Installed Thickness
AP-150	1.5 in (38 mm)
AP-200	2.0 in (51 mm)
AP-250	2.5 in (64 mm)

The system is designed to allow vertical infiltration through the surface and base layer when installed over properly prepared subgrade.

3. Typical Section

A typical installation includes:

1. Flexus surface layer
2. Compacted clean aggregate base
3. Optional geotextile separator
4. Compacted subgrade

Base thickness should be determined by site conditions and soil classification.

Flexus does not compensate for unstable or saturated subgrade conditions.

4. Subgrade Preparation

Subgrade shall be:

- Stable and well draining
- Free of organic material
- Free of standing water
- Compacted to a minimum of 95% Standard Proctor (ASTM D698)

Areas exhibiting pumping, soft soils, or high moisture content must be remediated prior to installation.

Recommended surface slope: 1–2% for positive drainage where required.

Installation over frozen or saturated subgrade is not permitted.

5. Aggregate Base Requirements

Base aggregate shall be:

- Clean, washed, angular stone
- Free of fines and clay
- Typically #57 or similar gradation

Minimum recommended base thickness for pedestrian applications: 4–6 inches compacted. Base shall be compacted in controlled lifts. Crusher run or materials containing fines are not permitted. Base shall provide uniform support and positive drainage.

6. Edge Condition Requirements

Flexus installations shall incorporate one of the following edge containment conditions:

A. Rigid Edge Restraint (Preferred Condition)

Rigid edge restraint is required where surface is exposed above adjacent grade.

Acceptable systems include:

- Steel landscape edging
- Aluminum restraint systems
- Cast-in-place concrete curb
- Engineered composite restraint systems

Edging must be securely anchored prior to surface placement.

B. Sub-Grade or Backfilled Beveled Edge Condition

Where Flexus surface terminates below adjacent grade and is fully laterally confined by compacted soil or aggregate, rigid edge restraint is not required.

In these installations:

- Edge shall be beveled and compacted
- Adjacent soil shall be properly compacted
- Lateral confinement must be maintained
- Surface edge shall not remain exposed above adjacent grade without rigid restraint.

Exposed, unsupported edges are not permitted.

7. Environmental Conditions

Installation shall proceed only under the following conditions:

- Minimum ambient temperature: 45°F (7°C) and rising
- Dry base and subgrade
- No precipitation during installation
- No freezing temperatures within 24 hours

Elevated humidity or substrate moisture may adversely affect curing.

8. Mixing Requirements

Flexus mix design must follow approved ratios.

Typical AP-200 (2") example:

- Solids per square foot: approximately 10.34 lbs
- Binder content: 11–12.5% by weight of total solids

Materials must be mechanically mixed until homogeneous. Unauthorized alteration of mix ratios voids system warranty.

9. Placement & Working Time Control

Mixed material shall be placed immediately after batching.

Maximum time from completion of mixing to placement:

- 20 minutes at 70°F (21°C)
- Reduced working time at elevated temperatures

Do not re-temper or add binder after initial mixing. Material shall not be placed if consistency indicates premature curing. Cold joints must be minimized. Where unavoidable, edges shall be cut clean prior to resuming installation.

10. Installation Procedure

1. Verify subgrade and base compaction
2. Confirm environmental conditions
3. Stage materials and confirm quantities
4. Mechanically mix aggregate, rubber, and binder
5. Place material within edge restraints
6. Screed to specified thickness
7. Finish surface uniformly
8. Protect surface during curing

Installation should proceed continuously to minimize cold joints. Surface finish shall reflect approved architectural sample and aggregate blend.

11. Curing

Typical cure schedule (temperature dependent):

- Initial set: 4–8 hours
- Light pedestrian traffic: 24 hours minimum
- Full cure: 48–72 hours

Surface must be protected from moisture during initial cure

12. ADA & Slope Considerations

When properly installed, Flexus may support ADA-compliant slope conditions.

Recommended:

- Maximum cross slope: 2%
- Longitudinal slope per ADA standards

Final compliance is the responsibility of the project designer.

13. Maintenance

Routine maintenance includes:

- Periodic debris removal
- Leaf blower cleaning
- Edge restraint inspection

Avoid metal snow plows or unapproved chemical deicers.

Annual inspection is recommended.

14. Repair

Localized repairs may be completed by:

- Removing affected area
- Cleaning base
- Installing new material
- Blending perimeter edges

Minor color variation may occur at repair interfaces.

15. Limitations

Flexus is not structural pavement and is not intended for vehicular loading.

Performance depends on proper subgrade preparation, drainage, and installation practices.

Installer qualification and adherence to approved procedures are required.

16. Disclaimer

This document provides general installation guidance. Site conditions vary. Final engineering design, base thickness determination, and compliance verification are the responsibility of the project engineer and installer.

For technical assistance or project-specific review, contact:

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