



Description

The adex-DIREX system is a barrier cladding designed specifically for “direct” applications over cementitious substrates, such as concrete block, pre-cast or masonry walls. The application creates an aesthetically pleasing finish, available in an unlimited selection of colours and a variety of textures. Once installed, adex-DIREX helps protect surfaces from the exterior elements and renews the appearance of existing weathered substrates.

Benefits

- Durable and flexible
- Seamless substrate protection
- Architectural design flexibility
- Resists dirt, fading and abrasion

Features

- Non-combustible basecoat
- Unlimited colour selection
- Direct application

Please refer to adex.ca for the latest version of this document, specifications (PDF + Word), technical drawings, product technical sheets, warranties, maintenance guide...and much more.

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PART 1 GENERAL

1.1 RELATED SECTIONS

1. Section 01 40 00: Quality Requirements
2. Section 03 30 00: Cast-in-Place Concrete
3. Section 04 20 00: Unit Masonry
4. Section 05 40 00: Cold-Formed Metal Framing
5. Section 06 10 00: Rough Carpentry
6. Section 07 20 00: Thermal Protection
7. Section 07 25 00: Weather Barriers (Vapour / Air Barriers)
8. Section 07 60 00: Flashing and Sheet Metal
9. Section 07 90 00: Joint Protection
10. Section 08 00 00: Openings
11. Section 09 28 00: Backing Boards and Underlayments
12. Section 09 90 00: Painting and Coating

1.2 DESCRIPTION

The adex-DIREX system is a direct-applied coating system for concrete, masonry or stucco walls. The system protects and refurbishes exterior walls, providing a low-cost, permanent solution. The application consists of the following components:

- 100% acrylic base coat;
- Glass fibre mesh;
- 100% acrylic finish coat (and primer).

1.3 REFERENCE STANDARDS

1. ASTM International
 1. ASTM B117: Standard Practice for Operating Salt Spray (Fog) Apparatus.
 2. ASTM C666: Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing;
 3. ASTM D522: Standard Test Methods for Mandrel Bend Test of Attached Organic Coatings;
 4. ASTM D523: Standard Test Method for Specular Gloss;
 5. ASTM D570: Standard Test Method for Water Absorption of Plastics;
 6. ASTM D822: Standard Practice for Filtered Open-Flame Carbon-Arc Exposures of Paint and Related Coatings;
 7. ASTM D1784: Standard Specification for Rigid Poly(Vinyl Chloride) (PVC) Compounds and Chlorinated Poly(Vinyl Chloride) (CPVC) Compounds;
 8. ASTM D2370: Standard Test Method for Tensile Properties of Organic Coatings;
 9. ASTM D4541: Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers;
 10. ASTM D5034: Standard Test Method for Breaking Strength and Elongation of Textile Fabrics (Grab Test);
 11. ASTM D5420: Standard Test Method for Impact Resistance of Flat, Rigid Plastic Specimen by Means of a Striker Impacted by a Falling Weight (Gardner Impact);
 12. ASTM E96: Standard Test Methods for Water Vapor Transmission of Materials;
 13. ASTM E283: Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen;
 14. ASTM E330: Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference;
 15. ASTM E331: Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference;
 16. ASTM E1131: Standard Test Method for Compositional Analysis by Thermogravimetry;
 17. ASTM E1252: Standard Practice for General Techniques for Obtaining Infrared Spectra for Qualitative Analysis;
 18. ASTM E2098: Standard Test Method for Determining Tensile Breaking Strength of Glass Fiber Reinforcing Mesh for Use in Class PB Exterior Insulation and Finish Systems (EIFS), after Exposure to a Sodium Hydroxide Solution;
 19. ASTM G 155: Standard Practice for Operating-Xenon Arc Light Apparatus, for Exposure of Non-metallic Materials.

2. CSA International
 1. CAN/CSA A3000: Cementitious materials compendium (Consists of A3001, A3002, A3003, A3004 and A3005).
3. National Research Council of Canada (NRC)
 1. Canadian Construction Materials Centre (CCMC): Technical Guide for EIFS.
4. Underwriters' Laboratories of Canada (ULC)
 1. CAN/ULC S101: Fire Endurance Tests of Building Construction and Materials;
 2. CAN/ULC S102: Surface Burning Characteristics of Building Materials and Assemblies;
 3. CAN/ULC S114: Method for Determination of Non-Combustibility;
 4. CAN/ULC S134: Fire Test of Exterior Wall Assemblies

1.4 DESIGN REQUIREMENTS

1. All work undertaken must comply with current codes, norms, construction best practices, as well as the manufacturer's installation instructions;
2. The substrate system shall be engineered to withstand all applicable loads, including live, dead, seismic, positive and negative forces, etc.;
3. On horizontal surfaces, the minimum slope of the system shall be a 6:12 pitch with a maximum length of 250 mm (10");
4. Expansion joints that allow for building movement shall be installed in the following locations:
 - a) At control joints in the substrate;
 - b) At expansion joints in the building;
 - c) Where dissimilar materials or substrates meet;
 - d) Anywhere specified on the plans;
 - e) At a maximum distance of 10 m (30 ft), to counter thermal expansion.

1.5 QUALITY ASSURANCE

1. System manufacturer shall be ADEX Systems Inc.
2. The applicator shall have a sufficient amount of material and enough qualified labour at his disposal to install the system.
3. The applicator shall follow all professional's directions when installing system components.

1.6 DELIVERY, STORAGE AND HANDLING

1. All materials supplied by ADEX Systems Inc. shall be delivered in their original

packages with intact and legible labels.

2. All materials supplied by ADEX Systems Inc. shall be stored in a cool dry location, out of the sunlight, protected from weather and other damage and at temperatures above 5 °C (40 °F).
3. Materials suspected of having been exposed to freezing must not be used.
4. Minimise the exposure of containers to temperatures exceeding 32 °C (90 °F).

1.7 JOB CONDITIONS

1. All materials supplied by ADEX Systems Inc. shall be delivered in their sealed, original packaging with their labels legible and intact.
2. All materials supplied by ADEX Systems Inc. shall be stored in a cool, dry location at temperatures above 5 °C (41 °F) and protected from weather and other damage.
3. Store materials away from direct sunlight and protect from temperatures in excess of 32 °C (90 °F).
4. Materials suspected of having been frozen or damaged must not be used.

1.8 ALTERNATIVES

Systems considered equivalent to adex-DIREX shall be approved by the architect, in writing, at least ten (10) working days prior to the project bid date.

1.9 WARRANTY

Upon request, the manufacturer shall provide a five-year limited warranty, stating that materials conform to specifications and are free of manufacturing defects.

PART 2 PRODUCTS

2.1 MANUFACTURER

All components of the system shall be obtained from ADEX Systems Inc. or its authorised distributors. No substitution or addition of other materials is permitted without written consent from the manufacturer.

2.2 PRODUCTS

1. Acrylic Base Coat:
Shall be a 100% acrylic-based, asbestos-free product, manufactured by ADEX Systems

Inc., such as ADEX BASE Coat.

2. Acrylic Fibre-reinforced Base Coat:
 - a) Shall be suitable for levelling between 2.4 mm and 6.4 mm (3/32" and 1/4") per coat;
 - b) Shall be a fibre-reinforced, 100% acrylic-based, asbestos-free product, made by ADEX Systems Inc., such as NIVELEX.
3. Glass Fibre Mesh:
 - a) Shall be sold by ADEX Systems or by one of its authorised distributors;
 - b) Shall meet ASTM D-5034 standards;;
 - c) Shall have different weights according to specific needs:
 - 1.UNITAPE QUICK TAPE MESH:
65g/m² (2 oz/yd²)
 - 2.STARTER MESH:
150g/m² (4.5 oz/yd²)
 - 3.STANDARD MESH (DESIGN):
150g/m² (4.5 oz/yd²)
 - 4.STANDARD MESH PLUS:
190g/m² (6 oz/yd²)
 - 5.INTERMEDIATE MESH:
375g/m² (11 oz/yd²)
 - 6.ARMOUR MESH:
500g/m² (15 oz/yd²)
 - 7.CORNER MESH:
305g/m² (9 oz/yd²)
4. Primer:

Shall be an acrylic and silica mix that can be applied by roller, such as PRIMEX, manufactured by ADEX Systems Inc.
5. Finish Coat:
 - a) Shall be factory-mixed, 100% acrylic-based, ready-to-use, containing integral colour and texture;
 - b) The texture shall be [see ADEX catalogue].

2.3 OTHER MATERIALS

1. Cement:

Shall be lump-free, GU Type cement meeting CSA A3001 standards.
2. Water:

Shall be clean, potable and free of sediment.

2.4 TESTS

1. Tests performed by an independent laboratory on the specified materials can be requested.
2. Properties shall meet or exceed the following values when tested by methods listed:

TEST METHOD

DURABILITY UNDER CLIMATIC CONDITIONS:
CCMC TG APPENDICE A2 (60 CYCLES)

No cracking, leaking or bubbling of base coat.
No delamination or cracking of finish coat.

ACCELERATED WEATHER RESISTANCE:
ASTM G155 (EXPOSED 2000 HOURS)

No deleterious effect.

SALT SPRAY RESISTANCE:
ASTM-B117 (EXPOSED 300 HOURS)

No deleterious effect.

MILDEW AND FUNGUS RESISTANCE:
CCMC 6.8

No mildew or fungal growth.

WATER PERMEABILITY:
CCMC 6.6

≥ 2 hours.

WATER ABSORPTION:
CCMC 6.7

≤ 20 %.

WATER VAPOUR TRANSMISSION:ASTM E96-95:

≥ 170 ng/Pa.s.m².

■ Test Method

■ Result

PART 3 EXECUTION

3.1 INSPECTION

1. Inspect the substrate to verify that it is structurally sound and solid, ensuring there are not any irregular voids or projections.
2. Remove all paint coatings from the surface.
3. Rough surfaces shall be mechanically buffed.
4. Remove any oil, grease, efflorescence, sealant or other material that may hinder adhesion of the system.
5. Inspect all metal flashing to ensure that it is properly installed and will provide adequate drainage.

6. The architect and general contractor shall be advised of any discrepancies. Work shall not proceed until unsatisfactory conditions are corrected.

3.2 MIXING

1. ADEX BASE Coat:
 - a) In a clean container, mix ADEX BASE coat and GU Type cement at a ratio (by weight) of one-to-one;
 - b) Allow mixture to set up for 5 minutes and mix again to break the initial set;
 - c) All other additives (such as rapid binder, anti-freeze, accelerator or others) are strictly prohibited.
2. NIVELEX
 - a) In the original container, mix 20 kg of NIVELEX with 10 kg of GU Type cement;
 - b) Allow mixture to set up for 5 minutes and mix again to break the initial set;
 - c) All other additives (such as rapid binder, anti-freeze, accelerator or others) are strictly prohibited.

3.3 INSTALLATION

1. Base Coat and Reinforcing Glass Fibre Mesh:
 - a) Thoroughly clean the surface of the wall;
 - b) Apply an initial layer of ADEX base coat to fill any surface cracks or mortar joints:
 1. When required base coat thickness is less than 2.4 mm (3/32") apply a first coat of ADEX BASE mixture to fill all cracks and gaps.
 2. When required base coat thickness is greater than 2.4 mm (3/32") apply a first coat of the NIVELEX mixture to fill all cracks and gaps.
 - c) Allow drying for 24 hours (or more) before application of the second coat;
 - d) Apply a second coat of the ADEX BASE or NIVELEX mixture (according to the required thickness) to the wall to obtain a smooth and uniform surface;
 - e) (Optional) Embed the glass fibre mesh into the BASE or NIVELEX coat:
 1. The surface shall be smoothed until the mesh is fully embedded.

2. The mesh shall be lapped a minimum of 63 mm (2-1/2") on all sides.

3. The glass fibre mesh shall be installed to heights indicated in the plans.

- f) All battens and grooves shall have an outward-facing slope to prevent moisture from accumulating on them;
 - g) An additional coat of the ADEX BASE or NIVELEX mixture may be required if, after drying, there are imperfections or the mesh is not completely embedded;
 - h) A period of 24 hours shall elapse prior to installing the finish coat.
2. Finish Coat:
 - a) With a roller, apply an even coat of ADEX PRIMEX primer (same colour as the finish coat) prior to installing the finish coat;
 - b) Trowel-apply a tight coat of ADEX Finish, texture [see ADEX catalogue] to a thickness not greater than the largest aggregate. Apply the finish coat in a continuous fashion, maintaining a wet edge. Levelling and texturing shall take place in one operation to give the ADEX Finish a uniform appearance;
 - c) Avoid applications in direct sunlight;
 - d) Finish coat shall not be used where caulking will be applied.

3.4 CLEAN-UP

1. Remove waste and left over materials (used in this section) from the job site.
2. Clean all adjacent materials and surfaces, and repair any defects caused to this application or any other work.

3.5 PROTECTION

1. Ensure that the general contractor protects all work against moisture infiltration and other damages by installing the necessary flashing and caulking in a timely manner.
2. Provide protection against dirt, moisture, high humidity, and freezing temperatures until materials are fully dry.

Information in this document contains the current recommendations for the installation of the adex-DIREX system. It is only provided as a guide and is subject to modifications at any time without notice. ADEX Systems Inc. reserves the right to make any modification according to technological progress. Specialised designers, architects, engineers or other professionals that choose to make any use of this information bear the complete responsibility, whatever it be, direct or indirect, that could follow from such use. ADEX Systems Inc. does not bear any responsibility that could give way to damages, defaults, defects, deficiencies, prejudices, loss or decrease of profit, be they direct or indirect, resulting from such use of this information by specialised designers, architects, engineers or other professionals. Please refer to www.adex.ca for the latest version of this document.

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