



ICC-ES Evaluation Report ESR-1947

Reissued February 2023

Revised January 2024

This report is subject to renewal February 2025.

DIVISION: 10 00 00—SPECIALTIES
Section: 10 22 19—Demountable Partitions

REPORT HOLDER:

DIRTT ENVIRONMENTAL SOLUTIONS, LTD.

EVALUATION SUBJECT:

DIRTT SOLID WALL / FACE PANEL WALLSYSTEM

1.0 EVALUATION SCOPE

1.1 Compliance with the following code:

- 2021, 2018, 2015, 2012, 2009 and 2006 *International Building Code*® (IBC)
- 2013 *Abu Dhabi International Building Code* (ADIBC)[†]

[†]The ADIBC is based on the 2009 IBC. 2009 IBC code sections referenced in this report are the same sections in the ADIBC.

For evaluation of compliance with codes adopted by the Los Angeles Department of Building and Safety (LADBS), see [ESR-1947 LABC Supplement](#).

For evaluation of compliance with codes adopted by the California Office of Statewide Health Planning and Development (OSHPD) AKA: California Department of Health Care Access and Information (HCAI) and the Division of State Architects (DSA), see the [ESR-1947 CBC Supplement](#).

Properties evaluated:

- Structural stability
- Surface-burning characteristics – interior trim
- Stability – interior finish
- Type I or Type II construction

1.2 Evaluation to the following green code(s) and/or standards:

- 2022 California Green Building Standard Code (CALGreen), Title 24, Part 11
- 2020, 2015, 2012 and 2008 ICC 700 *National Green Building Standard*™ (ICC 700-2020, ICC 700-2015, ICC 700-2012 and ICC 700-2008)

Attributes verified:

See Section 3.1

2.0 USES

The DIRTT Solid Wall / Face Panel Wall System is a relocatable floor-to-ceiling, nonbearing, non-fire-resistance-rated interior wall partition system for use in buildings of any construction type. When used in buildings of Type I or II construction, the partition system must be installed as described in Section 4.1.

3.0 DESCRIPTION

3.1 General:

The DIRTT Solid / Face Panel Wall System consists of a prefabricated aluminum frame assembly with adjustable steel levelers, aluminum base and ceiling tracks, optional insulation core, with or without a steel septum and DIRTT Finished Panels attached to both faces of the partition. The wall system is 4 inches (102 mm) thick or 6 inches (152 mm) thick wall system (See Figure 1 and 2) with finished tiles applied to both sides, and recognized for wall heights up to 12 feet (3.66 m). The components are illustrated in Figures 1 through 4 of this report. The partition system, installed in accordance with this report and the DIRTT installation instructions, complies with the 5 psf (0.24 KN/m²) transverse load requirements specified in Section 1607.16 of the 2021 IBC [Section 1607.15 of the 2018 IBC [Section 1607.14 of the 2015 and 2012 IBC (Section 1607.13 of the 2009 and 2006 IBC)]]].

The attributes of the system have been verified as conforming to the provisions of (i) CALGreen Section A4.404.3.3 for premanufactured building systems; (ii) ICC 700-2020, ICC 700-2015 and ICC 700-2012 Sections 601.5 and 11.601.5 for prefabricated components; and (iii) ICC 700-2008 Section 601.5 for prefabricated components. Note that decisions on compliance for those areas rest with the user of this report. The user is advised of the project-specific provisions that may be contingent upon meeting specific conditions, and the verification of the of those conditions is outside the scope of the report. Those codes or standards often provide supplemental information as guidance.

3.2 Materials:

3.2.1 DIRTT Solid Wall / Face Panel Wall System – Finished Panels:

DIRTT Finished Panels, also referred to as DIRTT Finished Tiles, are available with factory applied/laminated face

materials on 1/2-inch-thick (12.7 mm) Class A medium-density fiberboard (MDF) complying with ANSI A208.2, 1/2-inch-thick (12.7 mm) Class C medium-density fiberboard (MDF) complying with ANSI A208.2, or 1/2-inch-thick (12.7 mm) magnesium oxide (MgO) board, or, in place of the Finished Panels, 1/4-inch-thick (6 mm) tempered glass supplied with the back surface painted with a proprietary DIRT™ coating. The DIRT™ Finished Panels are supplied in widths from 57/8 inches (149 mm) up to 60 inches (1524 mm) and lengths up to 120 inches (3048 mm) that may be applied vertically or horizontally on a single frame or spanning multiple frames.

The DIRT™ Finished Panels comply with the stability requirements of Section 803.14 of the 2021 and 2018 IBC, {Section 803.12 of the 2015 IBC [Section 803.10 of the 2012 and 2009 IBC (Section 803.3 of the 2006 IBC)]}.

The interior finish classification of the DIRT™ Finished Panels is outside the scope of this report. See Section 5.8 of this report for additional details regarding the need to determine compliance with interior wall finish material requirements of IBC Section 803 to the satisfaction of the code official.

3.2.2 Framing Members: Solid wall / Face Panel Wall vertical framing members and horizontal sill, intermediate and header framing members are extruded from a minimum 6063-T6 aluminum alloy. The frame assemblies are supplied in 6- to 48-inch (152 to 1219 mm) widths and lengths up to 144 inches (3658 mm).

3.2.3 Ceiling and Base Track: Floor and ceiling tracks are extruded from a minimum 6063-T6 aluminum alloy.

3.2.4 Trim: The wall system is trimmed with flexible polyvinyl chloride (PVC) gaskets press fit to the base building wall, wall-to-wall connections, and ceiling surfaces. A flexible thermoplastic elastomeric (TPE) base trim at the finished floor surface. The trims have a minimum Class C flame spread and smoke developed indices and comply with 2021, 2018 and 2015 IBC Section 806.7 (2012, 2009 and 2006 IBC Section 806.5). As an alternative, an aluminum base trim may be provided.

3.2.5 Fasteners: Fasteners used to support the system must be properly specified (including size, length and location) by a registered design professional, or at the jobsite by the construction supervisor, based on the material to which the panels are being attached, with the approval of the code official.

3.2.6 Acoustic Insulation: Batt and blanket insulation, supplied by DIRT™ and intended for installation in the cavities of the wall panels at thicknesses up to 3 inches (76 mm) for the 4 inch (102 mm) Wall System and at thickness up to 4 inches (76 mm) for the 6 inch (152 mm) Wall System, has a flame spread index of 25 or less and a smoke developed index of 450 or less when tested in accordance with ASTM E84 or UL 723. As an alternative, a minimum 3 pcf (48 kg/m³) mineral wool insulation complying with ASTM E136 or a proprietary insulation complying with ASTM E136 supplied by DIRT™ may be used. Insulation is optional except as required in Section 4.1.

3.2.7 Leveler Assembly: The leveler assembly consists of components, including drive collars, constructed of ASTM A1008 steel with minimum yield strength of 36 ksi (248.4 MPa).

3.2.8 Carpet Grippers: Carpet grippers are composed of 16 gage [0.058 inch (1.47 mm) thick] steel with a minimum yield strength of 40 ksi (275 MPa).

3.2.9 Two-way Tapes: Two-way tapes supplied by DIRT™ are 6 inches (152.4 mm) long, 1 1/2 inches (38.1 mm) wide

and 0.08 inch (2.03 mm) thick, with minimum ultimate dynamic shear strength of 70 psi (483 MPa).

3.2.10 Steel Septum: No. 28 gauge steel sheet used in the construction of the steel septum wall assembly shown in Figure 5.

4.0 INSTALLATION

The DIRT™ Solid Wall / Face Panel Wall System must be installed in accordance with the manufacturer's installation drawings and this report.

Base and ceiling tracks of the wall system must be mechanically attached to ceilings and floors to the satisfaction of the code official. Carpet grippers may be used for connection of the base to the carpet (see Figure 4) and two-way tape may be used for connection of base to smooth floor surfaces where permitted by the code official.

The bottom flange of the leveler assembly must be attached to the aluminum base framing track with one No. 10-24 by 1/2-inch-long (12.7 mm) self-tapping screws. The upper flange of the leveler assembly is held in place by the back-to-back horizontal aluminum sill sections fastened to the vertical aluminum framing members. The vertical aluminum framing members (two per panel with a maximum spacing of 48 inches [1219 mm]) must be fastened to the horizontal aluminum sill with three No. 10 self-tapping screws and header sections with two No. 10 self-tapping screws, and to the horizontal aluminum intermediate sections [with a maximum vertical spacing of 40 inches (1016 mm)] with two or three No. 10-24 Type F self-tapping screws per end based on extrusion type. After the frames are positioned and made plumb, they must be leveled by adjustment of the leveler assembly drive collar. Leveler assemblies must be placed at a maximum spacing of 48 inches (1219 mm) on center and located at each end of the horizontal sill section where sill sections connect to the vertical framing members. Once the frames are leveled, the trims are installed at frame joints and around the perimeter, the DIRT™ Finished Panels are to be installed by attaching to the horizontal framing by engaging plastic or metal clips mounted to the tiles.

The 1/2-inch-thick (12.7 mm) Finished Panels are supplied in sizes determined by project specific design. The minimum size is 5 7/8 inches (149 mm) by 5 7/8 inches (149 mm) and the maximum size is 60 inches (1524 mm) by 120 inches (3048 mm). The 1/4-inch-thick (6 mm) tempered glass is supplied in a maximum size of 120 inches (3048 mm) by 60 inches (1524 mm).

DIRT™ Finished Panels may be full-height (vertically monolithic) or segmented (multiple tiles). The DIRT™ Finished Panels may be attached to the framing members in either horizontal or vertical orientation and may span and connect to multiple wall frame assemblies.

DIRT™ Finished Panels have plastic or metal clips (HANGERS and BATS) mounted on the back face for connection to the horizontal framing members at a maximum vertical spacing of 38 inches (965 mm) on center. Horizontal clip spacing varies with tile width but must not exceed 24 inches (610 mm) on center with the outside clips located not more than 2 inches (51 mm) from the vertical edges of the DIRT™ Finished Panels. Vertical spacing of clips must not exceed 40 inches on center to correspond directly with horizontal extrusion locations.

4.1 Installation in Buildings of Type I or Type II Construction: The DIRT™ Solid Wall / Face Panel Wall System intended for use in buildings of Type I or Type II construction must be installed in accordance with the manufacturer's installation instructions and this report and

be constructed as shown in Figure 5 (steel septum wall assembly) or as described in Sections 3.1 and 3.2 except as follows:

(1) Finished Panels, supplied with a medium density fiber board with a Class A classification (flame spread index of 25 or less and smoke developed index of 450 or less), installed with or without Class A fiberglass or Class A cotton-batt insulation filling the cavity, or

(2) Finished Panels, supplied with a medium density fiber board with a Class C classification (flame spread index of 200 or less and smoke developed index of 450 or less), installed with Class A fiberglass or Class A cotton-batt insulation filling the cavities on both sides of the steel septum, or

(3) Finished Panels, supplied with a fire-retardant treated wood (FRTW) plywood, installed with or without Class A fiberglass or Class A cotton-batt insulation filling the cavity, or

(4) Finished Panels, supplied with a Class A, ASTM E136 compliant magnesium oxide (MgO) board, installed with or without Class A fiberglass or Class A cotton-batt insulation filling the cavity.

When installed as described above, ASTM E136 complying 3 pcf mineral wool insulation or ASTM E136 complying proprietary insulation supplied by DIRT T may be used in lieu of the Class A fiberglass or Class A cotton-batt insulation. The interior finish rating of the exposed surface of the DIRT T Finished Panels must comply with the provision in Section 5.8 of this report.

5.0 CONDITIONS OF USE

The DIRT T Solid Wall / Face Panels Wall System described in this report complies with, or is a suitable alternative to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

- 5.1 The system must be manufactured, identified and installed in accordance with this report and the manufacturer's instructions.
- 5.2 The maximum partition height is 144 inches (3658 mm). Wall system heights exceeding 144 inches (3658 mm) are outside the scope of this report and must be justified to the satisfaction of the code official. The maximum frame width is 48 inches (1219 mm) wide. Frame widths exceeding 48 inches (1219 mm) are outside the scope of this report and must be justified to the satisfaction of the code official.
- 5.3 System installation must be limited to interior nonbearing, non-fire-resistance-rated, applications.
- 5.4 The use of the panels to support furniture loads, and incorporation of door components or electrical wiring, has not been evaluated and is beyond the scope of this report.
- 5.5 Adequacy of the ceiling grids to resist lateral loads imposed by the DIRT T Solid Wall / Face Panels Wall System must be justified to the code official, when the ceiling system is used to support the partition system.
- 5.6 Connectors, including carpet grippers or two-way tape attached to the base track, used to connect the partition system to supporting members must be adequate to resist imposed loads and justified to the satisfaction of the code official.

5.7 Calculations to justify the use of the ceiling grid and connections described in Sections 5.5 and 5.6 of this report must be submitted at the time of permit application. The calculations and/or details submitted must be prepared by a registered design professional where required by the statutes of the jurisdiction in which the project is to be constructed.

5.8 The interior finish classification of the DIRT T Finished Panels is outside the scope of this report. For the DIRT T Finished Panels, evidence of compliance with the interior wall finish material requirements of Section 803.1 of the 2021, 2018, 2015, 2012 and 2009 IBC (Section 803 of the 2006 IBC) must be submitted at the time of permit application for approval by the code official.

5.9 The components are assembled by DIRT T Environmental Solutions, Ltd., in Calgary, Alberta, Canada, or Savannah, Georgia, under a quality control program with inspections by ICC-ES.

6.0 EVIDENCE SUBMITTED

- 6.1 Data and reports of tests in accordance with the ICC-ES Acceptance Criteria Demountable (Relocatable) Partitions Used in Interior Applications (AC522), dated June 2021.
- 6.2 Engineering analysis to establish compliance with 2021 IBC Section 1607.16 [2018 IBC Section 1607.15 [2015 and 2012 IBC Section 1607.14 (2009 and 2006 IBC Section 1607.13)]]].
- 6.3 Report of testing in accordance with ASTM E136 for batt or blanket insulation.

7.0 IDENTIFICATION

- 7.1 The ICC-ES mark of conformity, electronic labeling, or the evaluation report number (ICC-ES ESR-1947) along with the name, registered trademark, or registered logo of the report holder must be included in the product label.
- 7.2 In addition, DIRT T Solid Wall / Face Panel Wall System components or packaging are identified with the manufacturer's name (DIRT T), manufacturing location, the product name, UPC barcode.

DIRT T Finished Panel label description includes "MDF," "Standard MDF" or "NAF MDF" when the medium density fiberboard substrate has a Class C classification when tested in accordance with ASTM E84. DIRT T Finished Panels label description includes "Fire-rated MDF," "Fire-retardant MDF," "Flame-retardant MDF" or "FR MDF" when the medium density fiberboard substrate has a Class A classification when tested in accordance with ASTM E84. DIRT T Finished Panels label description includes "MgO," "Magnesium Oxide Board" or "Mag Board" when the magnesium oxide board substrate has a Class A classification when tested in accordance with ASTM E84 and is noncombustible when tested in accordance with ASTM E136.

- 7.3 The report holder's contact information is the following:

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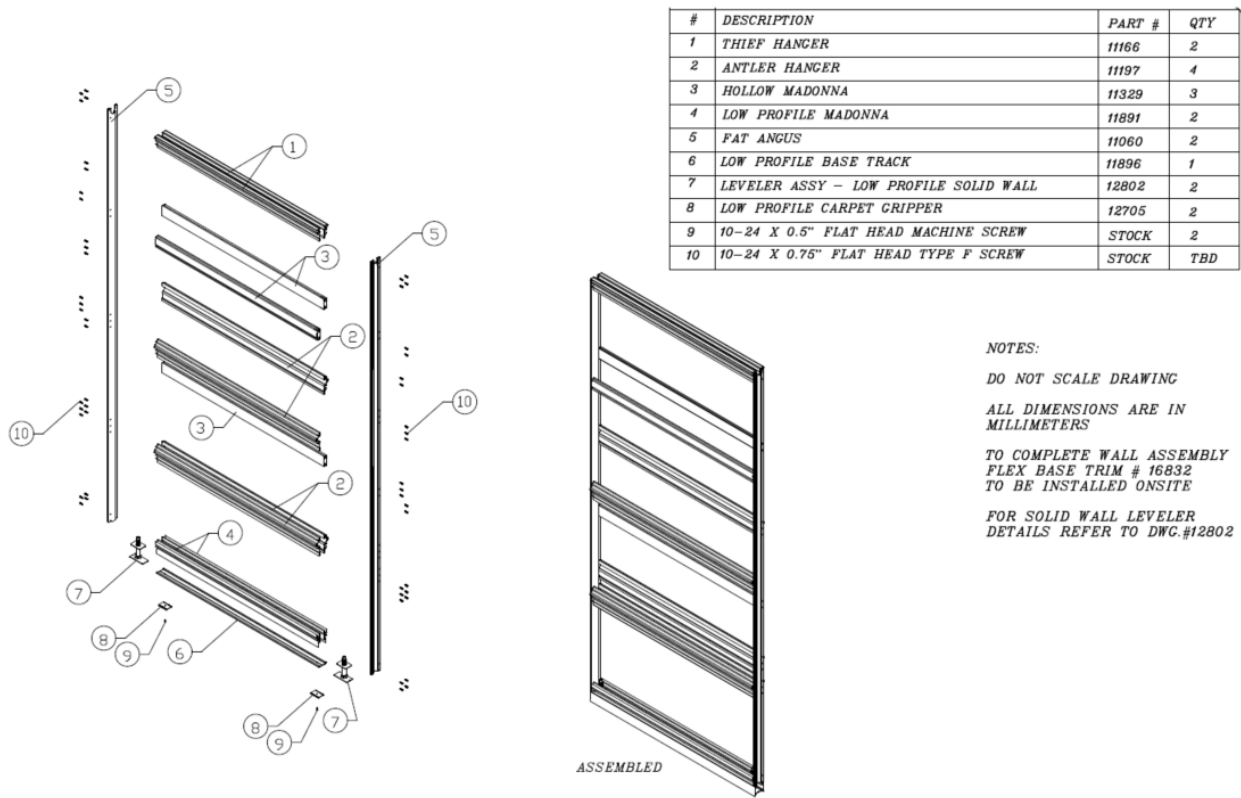


FIGURE 1—TYPICAL 4-INCH ALUMINUM FRAME

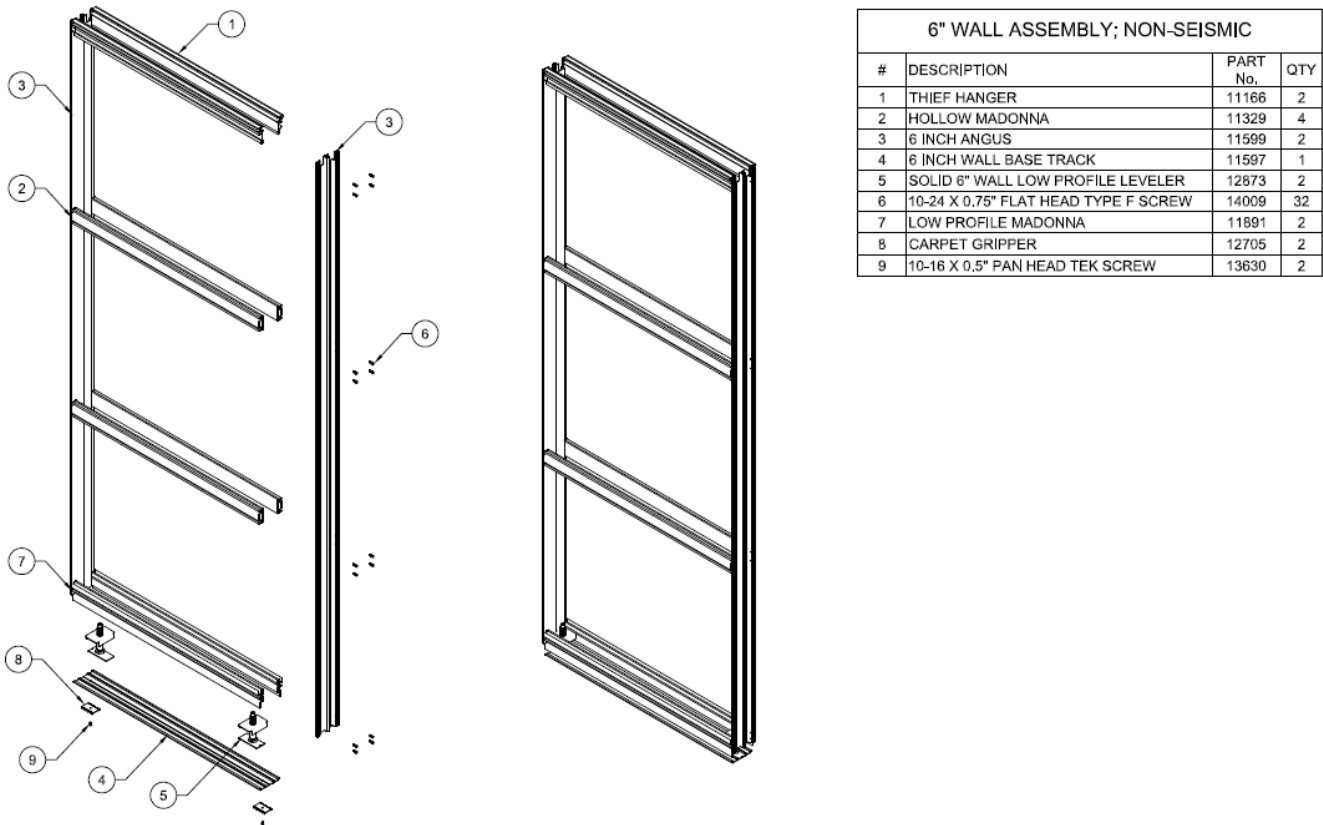


FIGURE 2—TYPICAL 6-INCH ALUMINUM FRAME

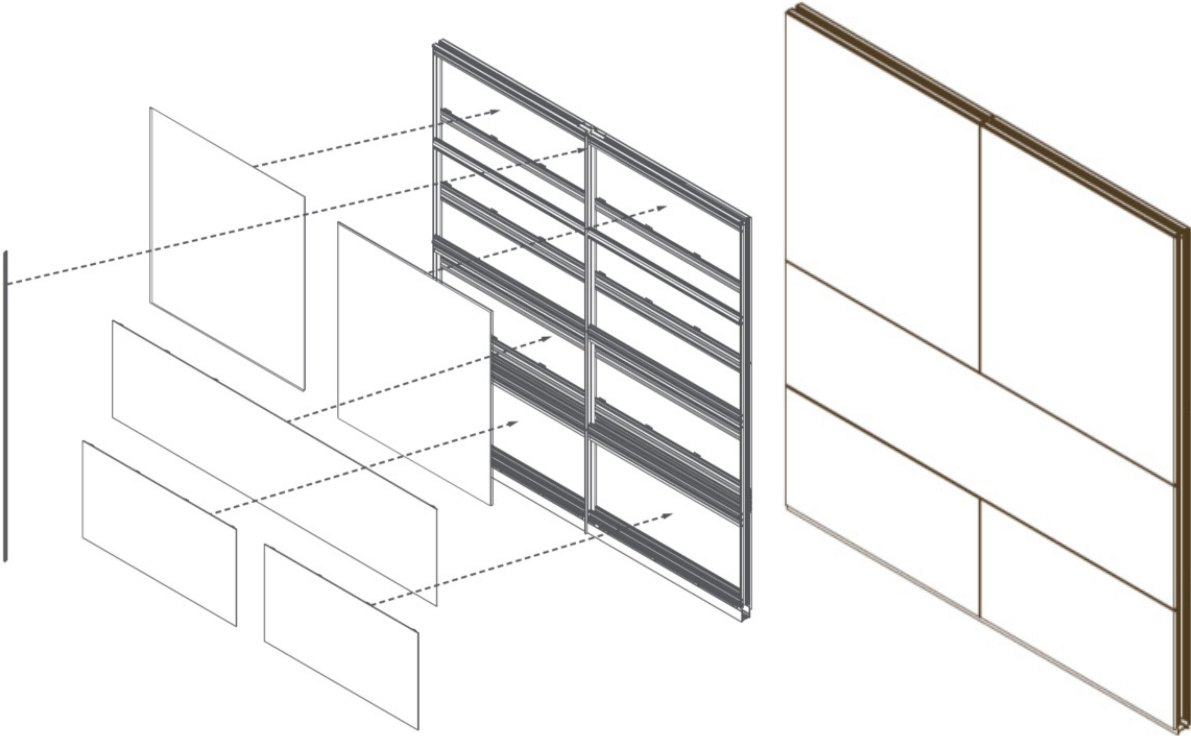
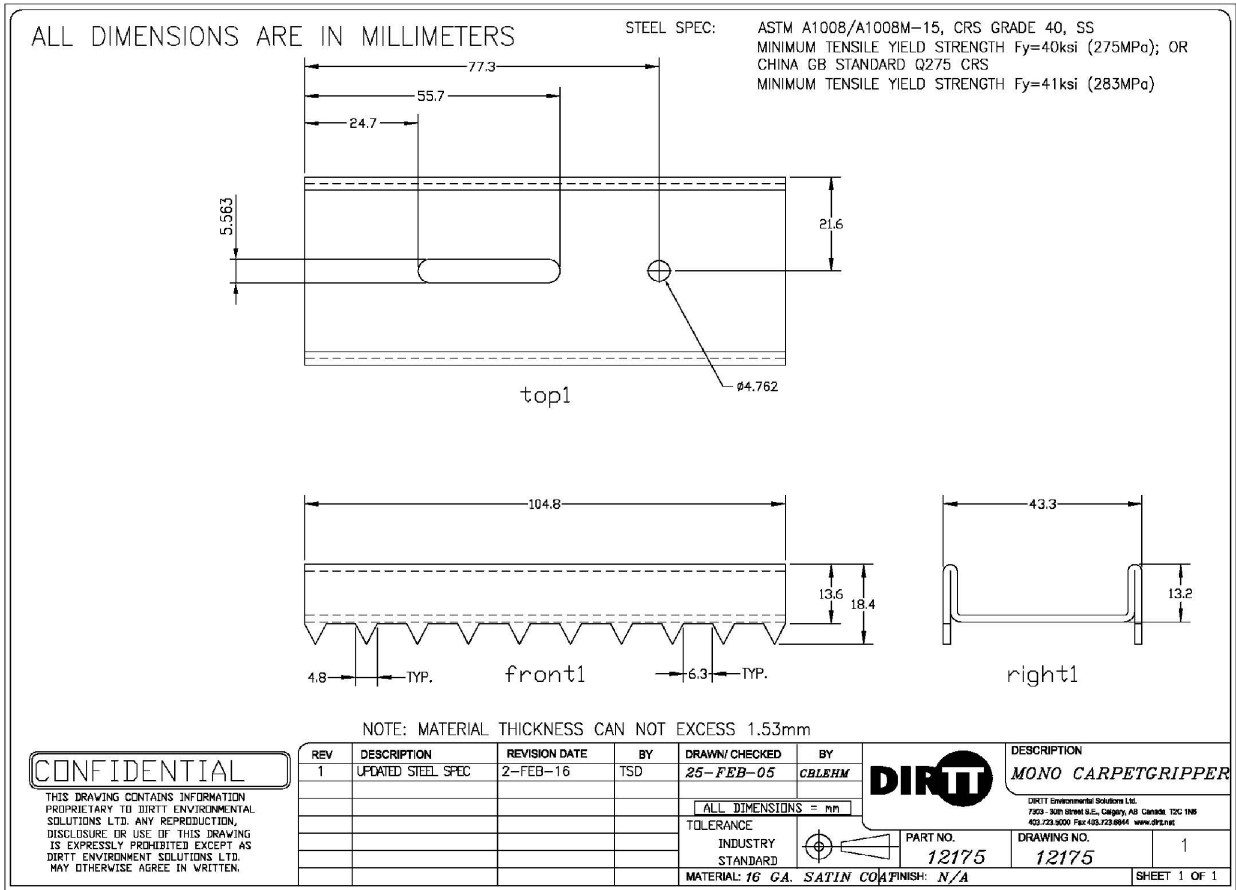


FIGURE 3—EXAMPLES OF FINISHED PANEL PLACEMENT



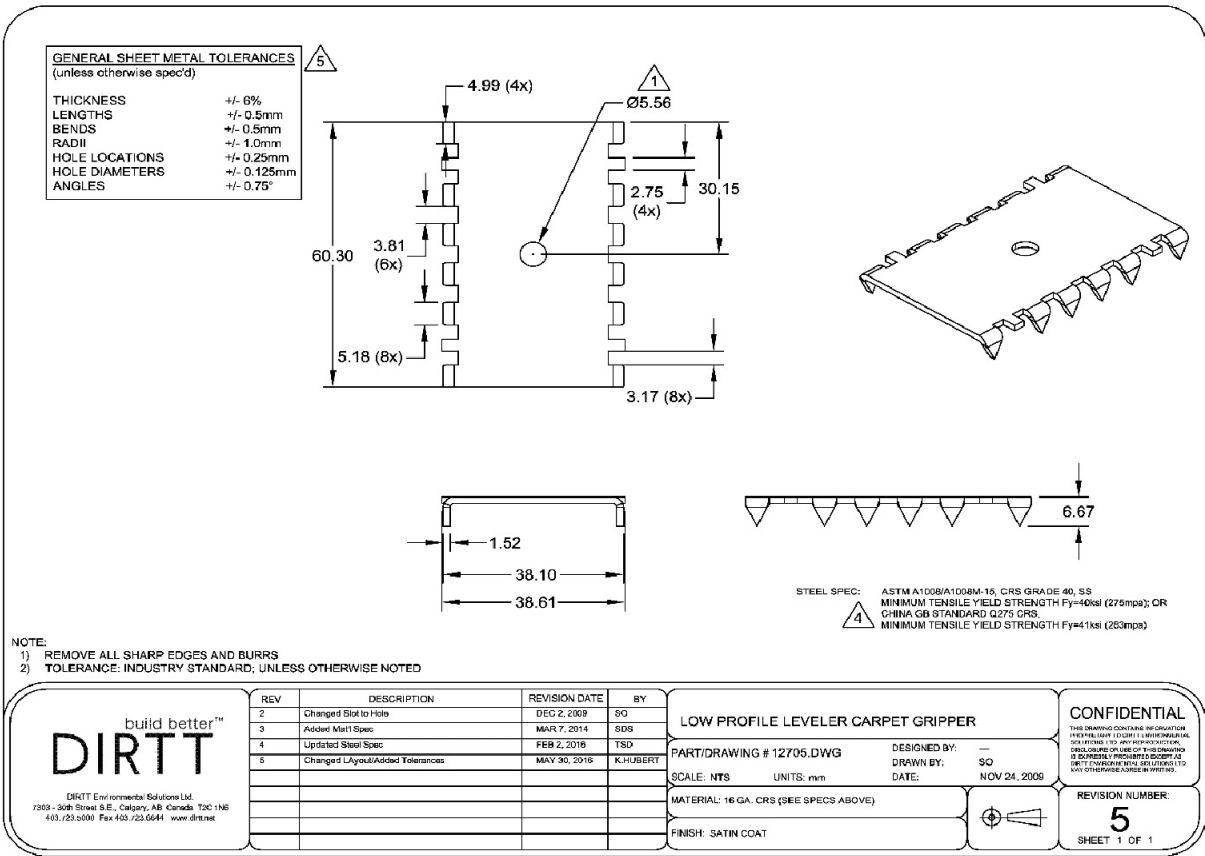


FIGURE 4—CARPET GRIPPER



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DIVISION: 10 00 00—SPECIALTIES
Section: 10 22 19—Demountable Partitions

REPORT HOLDER:

DIRTT ENVIRONMENTAL SOLUTIONS, LTD.

EVALUATION SUBJECT:

DIRTT SOLID WALL / FACE PANEL WALLSYSTEM

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that Dirtt Solid Wall / Face Panel Wall System, described in ICC-ES evaluation report [ESR-1947](#), has also been evaluated for compliance with the code noted below as adopted by the Los Angeles Department of Building and Safety (LADBS).

Applicable code edition:

2023 *City of Los Angeles Building Code* (LABC)

2.0 CONCLUSIONS

The Dirtt Solid Wall / Face Panel Wall System, described in Sections 2.0 through 7.0 of the evaluation report [ESR-1947](#), complies with the LABC Sections 602, 803.14, 806.7, 1607.16 and Table 1604.3, provided the design and installation are in accordance with the 2021 *International Building Code*® (IBC) provisions noted in the evaluation report and the additional requirements of LABC Sections 806.7 and 1607.16, as applicable.

3.0 CONDITIONS OF USE

The Dirtt Solid Wall / Face Panel Wall System described in this evaluation report supplement must comply with all of the following conditions:

- All applicable sections in the evaluation report [ESR-1947](#).
- The design, installation, conditions of use and identification of the Dirtt Solid Wall / Face Panel Wall System are in accordance with the 2021 *International Building Code*® (IBC) provisions noted in the evaluation report [ESR-1947](#).
- The design, installation and inspection are in accordance with additional requirements of LABC Chapters 16 and 17, as applicable.

This supplement expires concurrently with the evaluation report, reissued February 2023 and revised January 2024.

ICC-ES Evaluation Report

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REPORT HOLDER:

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EVALUATION SUBJECT:

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Applicable code edition:

2022 *California Building Code*® (CBC)

For evaluation of applicable chapters adopted by the California Office of Statewide Health Planning and Development (OSHPD) AKA: California Department of Health Care Access and Information (HCAI) and the Division of State Architect (DSA), see Sections 2.1.1 and 2.1.2 below.

2.0 CONCLUSIONS

2.1 CBC:

The DIRTT Solid Wall / Face Panel Wall System, described in Sections 2.0 through 7.0 of the evaluation report ESR-1947, complies with CBC Sections 602, 803.14, 806.7, 1607.16 and CBC Table 1604.3, provided the design and installation are in accordance with the 2021 *International Building Code*® (IBC) provisions noted in the evaluation report and the additional requirements of CBC Sections 806.7 and 1607.16, as applicable.

2.1.1 OSHPD:

The DIRTT Solid Wall / Face Panel Wall System, described in Sections 2.0 through 7.0 of the evaluation report ESR-1947, complies with CBC Sections 602, 803.14, 806.7, 1607.16, 1607A.16 and CBC Tables 1604.3 and 1604A.3, provided the design and installation are in accordance with the 2021 *International Building Code*® (IBC) and the following requirements:

1. Additional requirements of CBC Section 806.7 [OSHPD 1, 1R, 2, 3, 4 and 5] as applicable.
2. Additional requirements of CBC Section 1607.16 [OSHPD 1R, 2, 3 and 5] as applicable.
3. Additional requirements of CBC Section 1607A.16 [OSHPD 1 and 4] as applicable.

2.1.2 DSA:

The DIRTT Solid Wall / Face Panel Wall System, described in Sections 2.0 through 7.0 of the evaluation report ESR-1947, complies with CBC Sections 602, 803.14, 806.7, 1607.16, 1607A.16 and CBC Tables 1604.3 and 1604A.3, provided the design and installation are in accordance with the 2021 *International Building Code*® (IBC) and the following requirements:

1. Additional requirements of CBC Section 806.7 [DSA-SS and DSA-SS/CC] as applicable.
2. Additional requirements of CBC Section 1607.16 [DSA-SS/CC] as applicable.
3. Additional requirements of CBC Section 1607A.16 [DSA-SS] as applicable.

This supplement expires concurrently with the evaluation report, reissued February 2023 and revised January 2024.