

# Wood-Based Particleboard Core Doors and Hardware Reinforcement

## **BLOCKING IS NOT REQUIRED FOR WOOD PARTICLEBOARD CORE DOORS WITH SURFACE HARDWARE COMPONENTS ATTACHED WITH SCREWS**

As a result of screw withdraw tests from the face of the door using test method WDMA TM-10 Screw Holding Capacity on wood fiber particle core doors, the use of #12 thread to the head wood screw with a minimum of 1-1/4" thread engagement into the door are allowed for the attachment of door surface mounted hardware components.

Blocking is required for parallel arm closers in standard particleboard core.

Warranty coverage will apply if one of the listed conditions below are met:

- Throughbolts for mounting parallel arm closers in standard particleboard core
- Standard Particleboard Core with SCLC top rail (wide enough for surface screw placement)
- Extra Heavy-Duty Particleboard Core
- 45-Minute Particleboard Core
- Structural Composite Lumber Core
- Mineral Core with wide top rail (wide enough for surface screw placement)

A pilot hole is required for installation and it is recommended to consult hardware manufacturers for correct size for the application. Tests conducted showed that the doors achieved a WDMA Heavy-Duty Performance Level without the use of throughbolts.

Properly adjusted closers not designed with hold open or stop function with use in wood doors will not be warranted without properly located wall, floor, or overhead stops.

The wood fiber based particleboard complies with ANSI A208.1 particleboard standards, and meets or exceeds the performance duty level specified.

**ANSI/WDMA I.S.1A Flush Wood Door Minimum Performance Standards**

| Performance Attribute                      | Performance Duty Level  |                     |                     |
|--|---|---------------------|---------------------|
|  | Extra Heavy-Duty  | Heavy-Duty          | Standard-Duty       |
| Adhesive Bond Durability<br>WDMA TM-6      | Type I or Type II   | Type I or Type II   | Type I or Type II   |
| Cycle Slam, WDMA TM-7                      | 1,000,000 cycles  | 500,000 cycles      | 250,000 cycles      |
| Hinge-Loading, WDMA TM-8                   | 550 lbs. (2440N)  | 475 lbs. (2110N)    | 400 lbs (1780 N)    |
| Door Finishes Various<br>ASTM test Methods | TR-6/OP-6 or equal  | TR-4/OP-4 or equal* | TR-2/OP-2 or equal* |
| Screw holding, WDMA TM-10                  |   |                     |                     |
| Door Face (blocked or unblocked)           | 550 lbs. (2440 N)   | 475 lbs. (2110 N)   | 400 lbs. (1780 N)   |
| Vertical Door Edge                         | 550 lbs. (2440 N)   | 475 lbs. (2110 N)   | 400 lbs. (1780 N)   |
| Horizontal Door Edge **                    | 300 lbs. (1330 N)   | 240 lbs. (1060 N)   | 180 lbs. (810 N)    |
| Telegraph, Section T-1                     | Maximum 0.010 inch in any 3 inch span ( 0.25 mm in any 76 mm span)                      |                     |                     |
| Warp Tolerance, Section T-2                | Maximum 0.25 inch in any 3'-6" x 7' - 0" (6.4 mm in any 1050 mm x 2100 mm) door section |                     |                     |
| Squareness, Section T-3                    | Diagonal variance 1/8 inch (3.2mm)  |                     |                     |

\* See Section F7. Other formulations may exhibit similar performance characteristics, but must meet or exceed the performance levels for the systems specified to be considered as equal.

\*\* Horizontal door edge screw holding applies when hardware is to be attached.

| Door Type          |             | Particleboard   | Extra Heavy-Duty Particleboard (EHD)  | Composite Lumber Core (LSL or SCL)  | Mineral Core   |
|--------------------|-------------|---|---|---|--|
| Screw Withdrawal   | Hinge Stile | Extra Heavy-Duty  | Extra Heavy-Duty  | Extra Heavy-Duty  | Extra Heavy-Duty   |
|                    | Top Rail    | Extra Heavy-Duty  | Extra Heavy-Duty  | Extra Heavy-Duty  | Extra Heavy-Duty   |
|                    | Core        | Heavy-Duty  | Extra Heavy-Duty  | Extra Heavy-Duty  | Below Standard   |
|                    | Blocking    | Extra Heavy-Duty  | N/A Extra Heavy-Duty  | N/A Extra Heavy-Duty  | Extra Heavy-Duty   |
| Hinge Load         |             | Extra Heavy-Duty  | Extra Heavy-Duty  | Extra Heavy-Duty  | Extra Heavy-Duty   |
| Cycle Slam         |             | Extra Heavy-Duty  | Extra Heavy-Duty  | Extra Heavy-Duty  | Extra Heavy-Duty   |
| Duty Level Summary |             | Standard Particleboard core doors meet "Heavy-Duty" performance grade. Additional blocking would be required to pass Extra Heavy-Duty performance standards on surface applied hardware. Surface mounted parallel arm closers require additional blocking to maintain warranty. | Extra Heavy-Duty Particleboard meets "Extra Heavy-Duty" performance standards and requires no blocking for screw attached surface hardware. | Structural Composite Lumber core meets "Extra Heavy-Duty" performance standards and requires no blocking for screw attached surface hardware. | Fire-resistant composite (mineral core) doors meet "Extra Heavy-Duty" performance standards when blocked for screw attached surface hardware. Without blocking the core screw withdrawal is below "Standard-Duty" performance standards. |

Forte™ Opening Solutions is continually involved in the product testing and development of wood flush doors. Please call your Sales and Service Representative at 1.877.332.4484 for details on specific applications.