



Norbord

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19/32 SIP Fastener Withdrawal
(Exploratory Experiment)

March 2019
SIPA Conference, Phoenix AZ

New 19/32" OSB Facer

- Background
 - Norbord was approach to provide panel testing information to support SIP panel introduction in Florida.
 - Norbord Alabama plant submitted 19/32" OSB for PR-N612 testing (tension, bending strength and stiffness)
 - Porter Corporation has provided SIP panels made using 19/32 OSB to conduct screw and nail withdrawal testing.



Experimental Factors

- Test 3 Types of Fasteners:
 - Roofing Screw
 - 1-1/2 Ringed Nail
 - 2-1/2 Common 8d Nail
- Test 2 SIP panels
 - 19/32 Plywood
 - 19/32 OSB



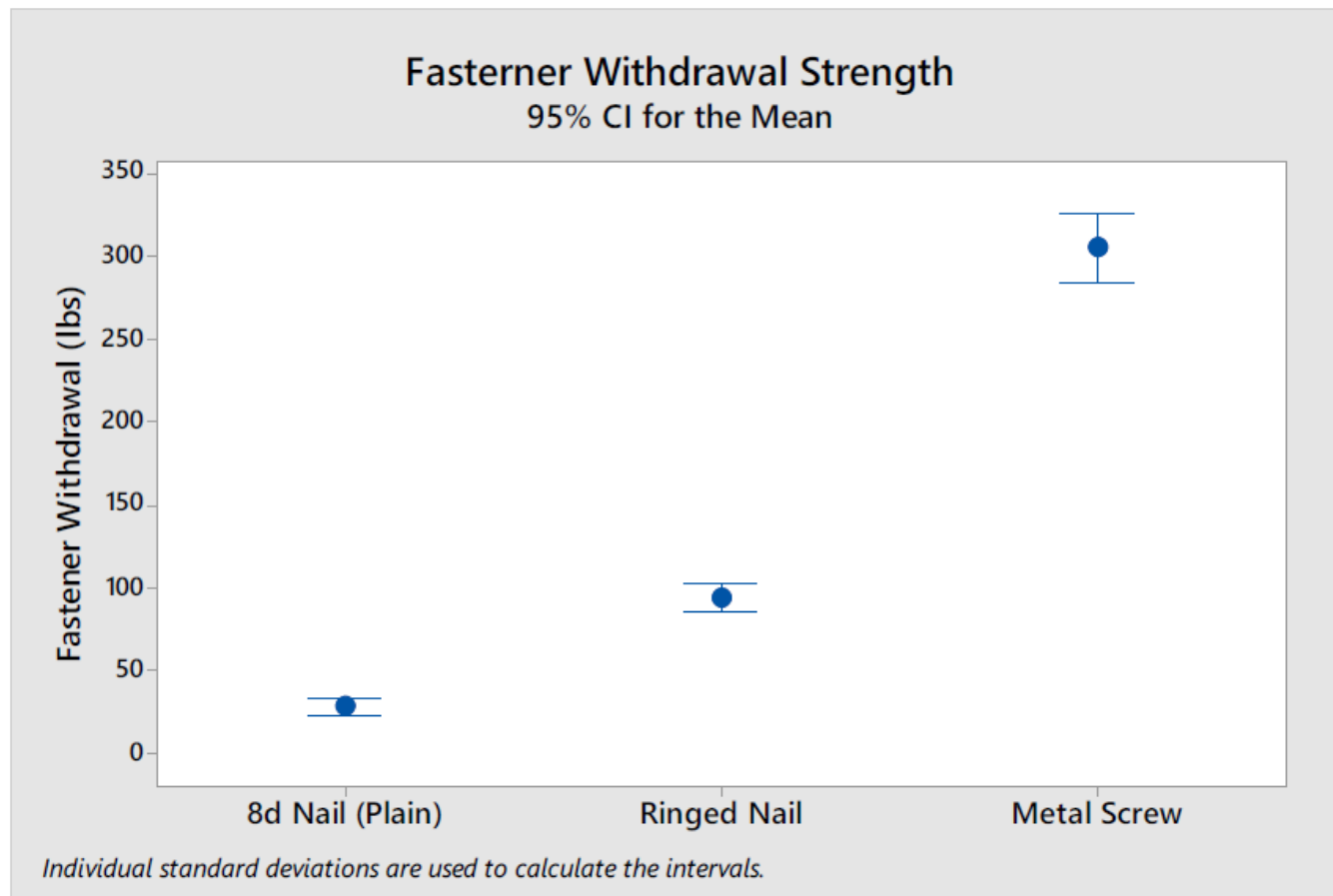
Experimental

- Test 3 Conditions (Insertion - Condition - Withdrawal)
 - Dry-Wet-Redry
 - Wet-Redry
 - Dry-Dry
- Number of Replicates: 10



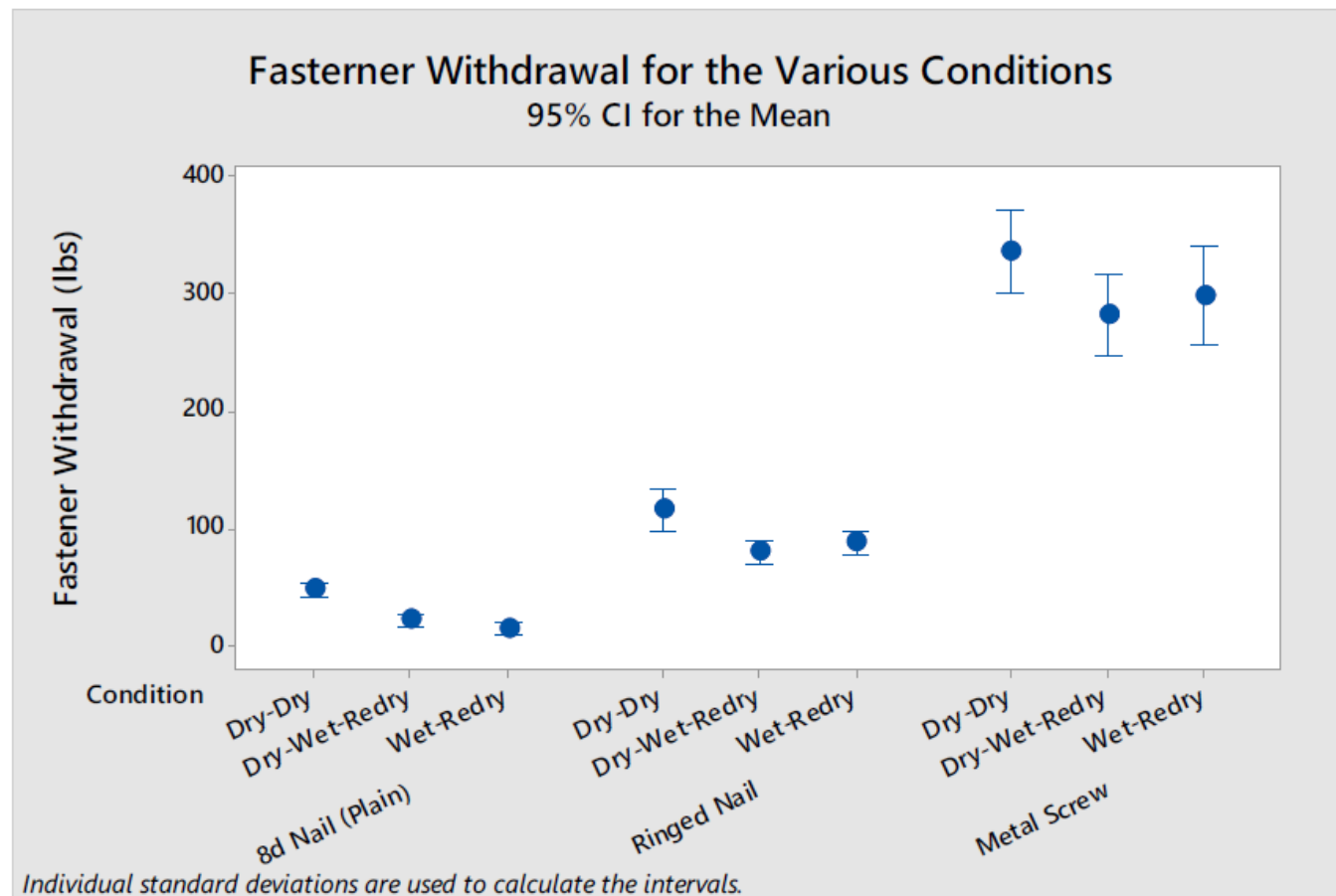
Impact of Fastener Type on Withdrawal Strength

- There is enough evidence to conclude that there are differences among the means at the 0.05 level of significance for the three (3) Fasteners (One-Way ANOVA).



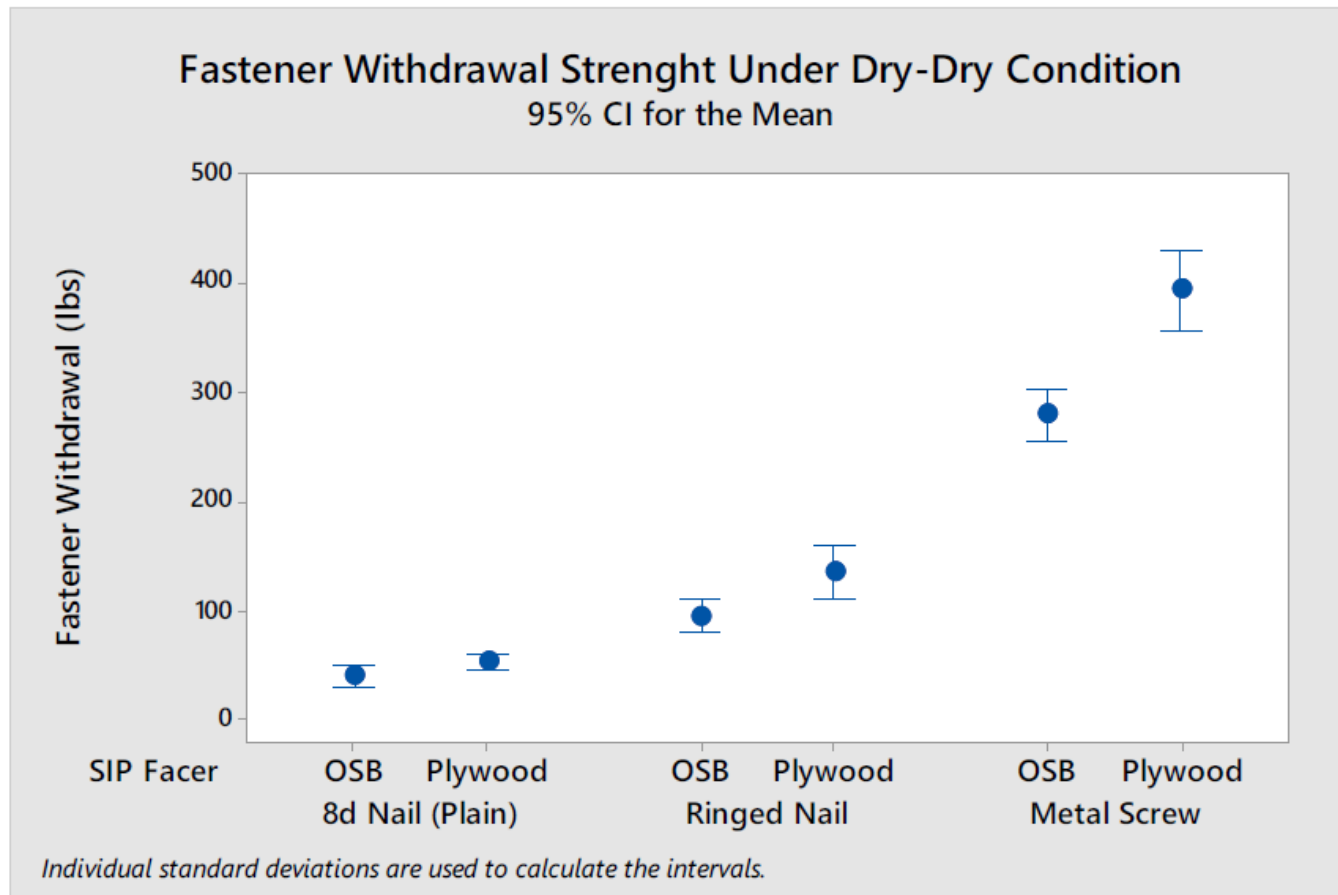
Impact of Soaking the SIP Panels as per ASTM D1037

- There is enough evidence to conclude that the “Dry-Dry” condition is higher strength for the “8d Nail” and the “ringed nail” (One-Way ANOVA).



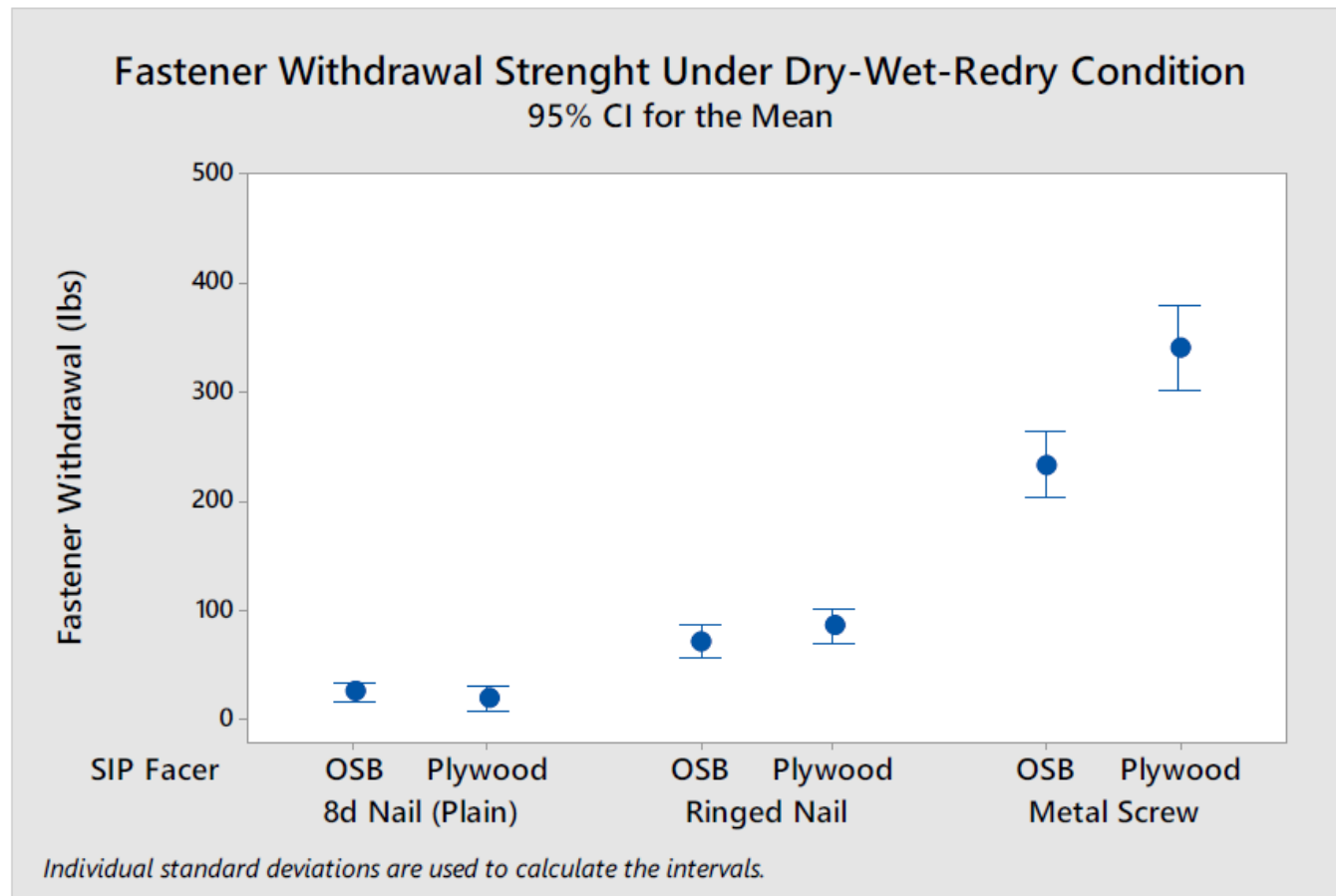
Faster Withdrawal for Various SIP Facers

- The “Dry-Dry” fastener withdrawal means are different” when comparing OSB and Plywood (2 Sample t-Test).



Faster Withdrawal for Various SIP Facers

- The “Dry-Wet-Redry” nail withdrawal means are not statistically different” when comparing OSB and Plywood (2 Sample t-Test).



Faster Withdrawal for Various SIP Facers

- The “Wet-Redry” nail withdrawal means are not statistically different” when comparing OSB and Plywood (2 Sample t-Test).

