

DOWEL CONNECTIONS

INTRODUCTION:

Tests were conducted on connections between Spancrete® hollowcore plank and masonry walls using a rebar driven into a hole drilled through the plank and into a bond beam. This is an economical connection that is occasionally used at lap and bearing conditions to resist relatively light loads. The connection is used for inward or outward pressures or to transfer diaphragm shear forces along the length of the wall.

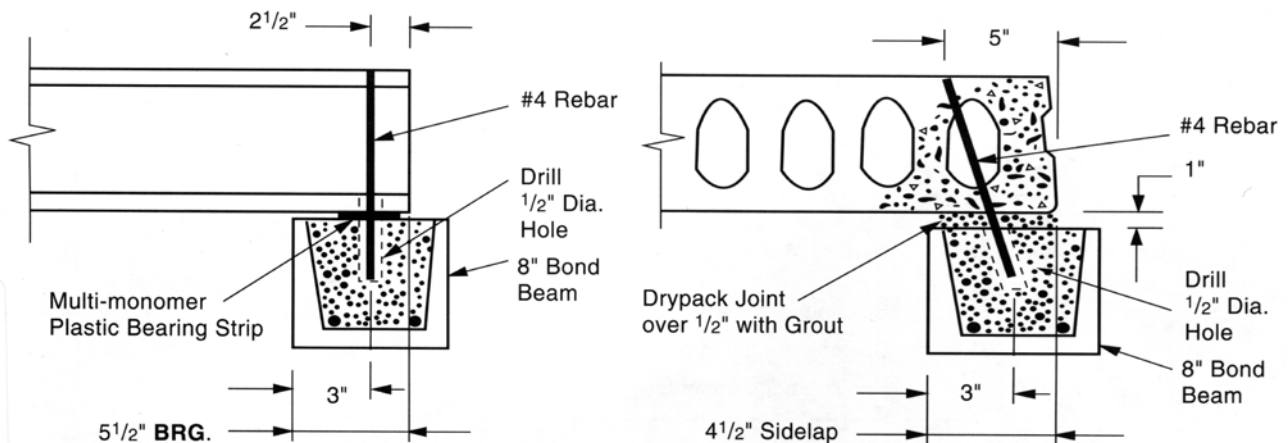


Figure 1 End Bearing

Figure 2 Sidelap

CONCLUSIONS:

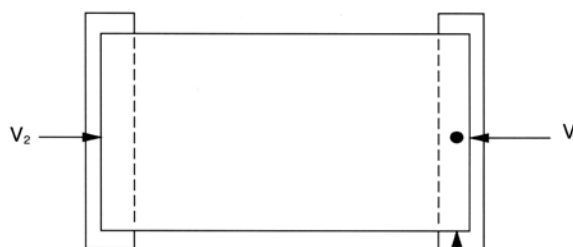
1. Shear force can be transferred from Spancrete to a masonry wall with this connection.
2. Plank thickness is not a factor in the capacity of the connection. The results are applicable to all plank thicknesses.
3. The thickness of concrete below the cores in the tested plank represents the minimum currently in use. The results may therefore be conservatively applied to other plank cross sections.
4. The results presented are actual test data from a small number of samples. It is suggested that the lowest test value for each detail be used with appropriate ACI and PCI load factors and a strength reduction factor of at least .70.

DESIGN EXAMPLE

The data listed are minimum test values obtained for shear in the direction noted. Appropriate load factors and strength reduction factors must be applied.

END BEARING DATA

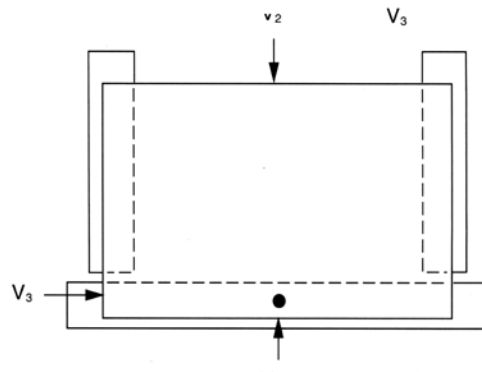
Load Direction	Minimum* V_{test} (KIPS)	Failure Mode
V_1	2.78	Concrete Cone
V_2	3.40	Concrete Cone
V_3	4.50	Rebar Yield



Note: Dowel location in bond beam is critical to maintain capacity.

SIDLAP DATA

Load Direction	Minimum* V_{test} (KIPS)	Failure Mode
V_1	1.87	Spalling bond beam face
V_2	2.96	Spalling bond beam face
V_3	2.66	Spalling bond beam face



Note: Actual test values must be reduced by appropriate strength reduction factors and safety factors to obtain working load values. The research was done using 48" wide, 8" thick Standard Spancrete® hollowcore. However, this concept applies to all Spancrete cross sections.

EAST

Oldcastle Precast, Inc.
South Bethlehem, NY

Oldcastle Precast, Inc.
Manchester, NY

Conewago Precast Building Systems
Hanover, PA

MIDWEST
Spancrete, Inc.
Green Bay, WI

Spancrete Industries, Inc.
Waukesha, WI

Hanson Structural Precast Midwest, Inc.
Maple Grove, MN

Spancrete of Illinois, Inc.
Arlington Heights, IL

WEST
Hanson Structural Precast Pacific, Inc.
Inwindale, CA

KIE-CON
Div. of Kiewitt Pacific Co.
Antioch, CA

Owell Precast
Sandy, UT

SOUTHWEST
Manco Structures, Ltd.
Schertz, TX

SOUTH

Cement Industries, Inc.
Fort Myers, FL

Florida Precast Industries, Inc.
Sebring, FL

MC Precast, Inc.
Atlanta, GA

CANADA
Burnco Concrete Products Ltd.
Calgary, Canada

EGYPT
Samcrete Egypt
Ahram, Giza

MEXICO

ITISA
Mexico City, Mexico

Spancrete Noreste
Monterrey, Mexico

TURKEY
Yapi-Merkezi
Camlica-Istanbul, Turkey

CARIBBEAN
Preconco Limited
Barbados, West Indies

Spancrete Caribbean, Ltd.
Trinidad, West Indies

UAE
Hi-Tech Concrete Products, LLC
Abu Dhabi, UAE

MACHINE MANUFACTURER

Spancrete Machinery Corporation
Waukesha, WI

Spancrete is also manufactured in

Armenia	Denmark	Russia
Australia	Guatemala	South Korea
Belgium	Hungary	Spain
Brazil	Ireland	Switzerland
China	Israel	
Croatia	Japan	