Metal Stud Crete®
The Leaner Greener Precast Wall System

Composite Building Systems, Inc.

PRODUCT DATA SHEET

Metal Stud Crete®

SHEAR TRANSFER STRIP

DESCRIPTION

General:

MetalStudCrete is a light-gage steel connector strip used to transfer shear stresses in composite panel systems. The use of the strip is not limited to any seismic design category. The composite panels consist of light-gage steel studs and a reinforced concrete facing or topping on one side of the studs, with the MetalStudCrete metal connector providing a shear-flow connection between the steel studs and the concrete.

MetalStudCrete Connector (MSC): The MetalStudCrete connector transfers shear stresses between the concrete facing and the light-gage steel stud. The strip is fastened to the web of the stud and the flange of the track, and the strip/flange is then embedded into the concrete facing. The strip is fabricated from No. 18 gage [0.047 inch (1.19 mm)] steel, complying with ASTM A653-23-cs Type-B G-90. The galvanized coating complies with ASTM A924. MSC connectors may be epoxy-coated for added corrosion resistance on request.

Steel Studs: Where the MetalStudCrete connector is used, steel studs in composite panels must be recognized in a current ICC-ES evaluation report. Physical and section properties are found in the evaluation report on the steel stud.

Concrete: The concrete facing is normal-weight concrete complying with the provisions of IBC Chapter 19 or IRC Section R402.2 as applicable. The minimum compressive strength must be 5,000 psi at 28 days. The minimum thickness of the concrete is 2".

Steel Reinforcement: Concrete panels must be reinforced in accordance with the structural design, and the steel reinforcement must comply with the IBC. Concrete protection for reinforcement must comply with the IBC.

Screws: The MetalStudCrete connector must be attached to the stud using galvanized, self-drilling, self-tapping sheet metal screws conforming to SAE J78 and AISI CF 92.1. The design engineer must calculate the shear, pullout and tension requirements and select a screw which has sufficient capacity.

Design: The panels are designed using the accepted engineering principles of transformed section properties and allowable stress design. The design must include consideration of light-gage steel design requirements specified in the Specification for Design of Cold-formed Steel Structural Members, published by the American Iron and Steel Institute. The shear strip is designed to allow for continuous insulation to be applied between the stud flange and the inner face of the concrete in various dimensions that allow for R-Factors of R-5, R-7.5, R-10, R-12.5 and R-15.6 as required by the IECC. The axial-load capacity of the composite panel must be a

function of the capacity of the steel studs only. The transverse load capacity of the composite panel is based on the transformed section of the composite steel stud and concrete.

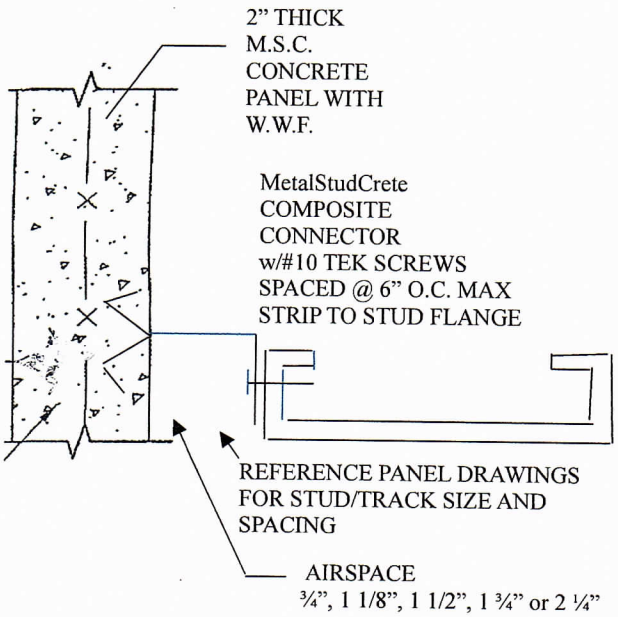
Fabrication: The panels may be fabricated at the jobsite or at manufacturing locations approved by Composite Building Systems, Inc. The MetalStudCrete shear transfer connectors are fabricated at manufacturing locations approved by Composite Building Systems, Inc.

Installation: The panels are installed in accordance with the approved design drawings and specifications.

Identification: The steel studs are identified in accordance with their respective evaluation reports. When the MetalStudCrete connector is delivered to the point of fabrication of the panels, the strip bears a stamp identifying the product as MetalStudCrete, and the manufacturer as Composite Building Systems, Inc.

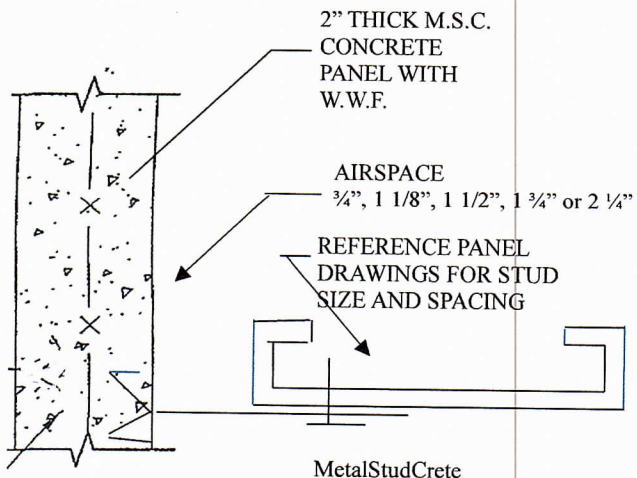
NOTE: CONNECTION OF CONTINUOS BOTTOM AND TOP TRACK TO CONCRETE FACING IS ACHIEVED WITH SAME MetalStudCrete FLANGE COMPOSITE CONNECTOR (ALSO APPLIES AT HEADER CONDITIONS)

For further details on Metal Stud Crete® contact
Composite Building Systems Inc.
E-mail: info@metalcrete.com
Website: www.metalcrete.com
Phone: (818) 606-4703



5 MC10

M.S.C. TRANSFER STRIP @ STUD/TRACK FLANGE



6 MC10

M.S.C. TRANSFER STRIP @ STUD WEB

NOTE: Drawings not to scale. Drawings in plan view