Rapid Ex Forming Corp. · 3651 S Clinton Ave, South Plainfield, NJ 07080
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TITAN EQ STUD

2-1/2″ web · 20EQ (19 mil) · interior nonload-bearing composite walls

Member
ST212125-19

Project	
Contractor	
Architect / Engineer	
Submitted by	
Date	

Review

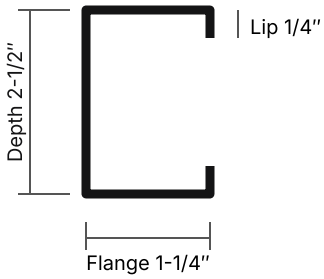
- ☐ Approved
- ☐ Approved as noted
- ☐ Revise and resubmit

Reviewed by / date

PRODUCT DATA

ESR-5121 Section 3 and Table 5

Member designation	**ST212125-19**
Web depth	**2.500 in**
Flange	**1.25 in**
Lip	**0.25 in**
Inside corner radius	**0.04 in**
Design thickness (t)	**0.0190 in (19 mil)**
Minimum delivered thickness	**0.0181 in (95% of t)**
Steel	**ASTM A653 SS Grade 33 or 50, Class 1**
Yield strength (Fy), properties	**33 ksi**
Coating	**G40 minimum**
Punchouts	**3/4″ × 2-1/2″, 24″ o.c.**
First punchout	**12″ from member end**



Punchouts on web centerline

SECTION PROPERTIES

ESR-5121 Table 6 · Fy = 33 ksi · design thickness 0.0190 in

GROSS PROPERTIES

Weight	lb/ft	**0.345**
Area	in^2	**0.101**
Ix	in^4	**0.105**
Sx	in^3	**0.084**
rx	in	**1.017**
Iy	in^4	**0.021**
ry	in	**0.456**

EFFECTIVE PROPERTIES

Ixe	in^4	**0.091**
Sxe	in^3	**0.067**
Ma-L	lb-in	**1,320**
Ma-D	lb-in	**1,200**
Vag	lb	**258**

TORSIONAL PROPERTIES

J × 1000	in^4	**0.012**
Cw	in^6	**0.027**
Xo	in	**-0.954**
Ro	in	**1.468**
β		**0.577**
Lu	in	**30.2**

Effective properties do not incorporate the strength increase from the cold work of forming. Gross properties, including torsional properties, are based on the full unreduced cross section of the stud, away from punchouts. Ixe, Sxe, Ma-L and Ma-D are at the punchout; Ma-D assumes kφ = 0. Allowable moments are for Allowable Strength Design (ASD) with the compression flange continuously braced (AISI S100-16 (2020) w/S2-20). Ma-L, Ma-D and Vag are listed in ESR-5121 in thousands (kip-in, kips) and shown here in lb-in and lb.

ICC-ES EVALUATED · ESR-5121

Titan EQ Stud line studs and tracks are evaluated in ICC-ES Evaluation Report ESR-5121 (report holder: Rapid Ex Forming Corp.) for the 2024, 2021, 2018 and 2015 International Building Code (IBC). The ESR-5121 CA Supplement covers the 2025 California Building Code (CBC).

Issued August 2026. The report remains under an active continuous compliance program through the end of August 2027. Check the current listing at icc-es.org.

Scan for the listing

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TITAN EQ STUD · COMPOSITE LIMITING HEIGHTS

2-1/2″ web · 20EQ (19 mil) · Fy = 50 ksi · one layer 5/8″ Type X each side

Member
ST212125-19

LIMITING HEIGHTS, VERTICAL GYPSUM BOARD

ESR-5121 Table 8 · long dimension of board parallel to studs

Spacing (in. o.c.)	5 psf			7.5 psf			10 psf			15 psf		
	L/180	L/240	L/360	L/180	L/240	L/360	L/180	L/240	L/360	L/180	L/240	L/360
12	13′ 6″ [a]	13′ 5″ [c]	11′ 11″ [c]	11′ 0″ [a]	11′ 0″ [a]	10′ 3″ [c]	9′ 6″ [a]	9′ 6″ [a]	9′ 3″ [c]	–	–	–
16	13′ 4″ [c]	12′ 2″ [c]	10′ 8″ [c]	11′ 0″ [a]	10′ 6″ [c]	9′ 3″ [c]	9′ 6″ [a]	9′ 5″ [c]	8′ 4″ [c]	–	–	–
24	11′ 7″ [c]	10′ 6″ [c]	9′ 3″ [c]	9′ 10″ [c]	9′ 0″ [c]	8′ 0″ [c]	8′ 10″ [c]	8′ 1″ [c]	–	–	–	–

LIMITING HEIGHTS, HORIZONTAL GYPSUM BOARD

ESR-5121 Table 9 · short dimension of board parallel to studs

Spacing (in. o.c.)	5 psf			7.5 psf			10 psf			15 psf		
	L/120	L/240	L/360	L/120	L/240	L/360	L/120	L/240	L/360	L/120	L/240	L/360
12	–	11′ 9″ [a]	10′ 7″ [c]	–	9′ 7″ [a]	9′ 1″ [c]	–	8′ 3″ [a]	8′ 2″ [c]	–	–	–
16	–	11′ 1″ [c]	9′ 6″ [c]	–	9′ 6″ [c]	8′ 2″ [c]	–	8′ 3″ [a]	–	–	–	–
24	11′ 9″ [a]	9′ 6″ [c]	8′ 2″ [c]	9′ 7″ [a]	8′ 2″ [c]	–	8′ 3″ [a]	–	–	–	–	–

Heights from ESR-5121 Tables 8 and 9 for Fy = 50 ksi studs, converted from decimal feet and rounded down to the nearest inch. "–" means no height is listed in the report for that condition.

a = governed by bending strength · b = governed by bearing strength · c = governed by deflection.

Composite walls: gypsum wallboard minimum 5/8″ Type X complying with ASTM C1396, manufactured by National Gypsum Company, attached to both sides of the framing for the full wall height; No. 6 × 1-1/4″ Type S drywall bugle head screws (ASTM C1002) at 12″ o.c. maximum; installation per ASTM C840 or GA-216. No fasteners are required between stud and track; stud end bearing on the track must be at least 1″. Heights are based on a maximum stud spacing of 24″ o.c. and apply to interior nonload-bearing walls with zero superimposed axial load.

CONDITIONS AND STANDARDS

ESR-5121 Sections 4, 5 and 7

- Interior nonload-bearing composite walls only; use outside non-structural applications (AISI S220) is outside the scope of ESR-5121.
- Install per the applicable code, the approved plans and ESR-5121; where they conflict, the report governs.
- Plans and calculations must be submitted to the code official; sealed by a registered design professional where required.
- Design of the wall attachment to the surrounding structure is outside the scope of the report.
- Minimum uncoated base-metal thickness as delivered: 95% of the design thickness.
- Members are stamped at no more than 96″ o.c. with Rapid Ex Forming, ESR-5121, member designation, minimum thickness, minimum yield strength and coating.
- Steel: ASTM A653 SS Grade 33 or 50, Class 1. Coating: G40 minimum.
- Section properties: AISI S100-16 (2020) w/S2-20. Composite heights: ICC-ES AC86 (June 2019, editorially revised February 2024).

Disclaimer. All data, details and specifications herein are a general guide for using Rapidex Forming products. These products should not be used in design or construction without evaluation by a qualified engineer or architect to determine their suitability for a specific application. Where this sheet and ICC-ES ESR-5121 differ, the evaluation report governs. Rapidex Forming assumes no liability for failure resulting from the use or misapplication of computations, details or specifications contained herein, or for damages resulting from improper application, handling or installation of these products.