# **Project Information**



Project Name: Perkins+Will Washington DC

Address: 1222 22nd St. NW Washington, DC



Metal Framing Start Date:

### **Distributor**

Capitol Building Supply, Inc. 113 Potomac Ave SW Washington, DC 20024 T: (202) 554-9191

### **Framing Contractor Information**

Anning-Johnson Company 9408 Gunston Cove Rd #A Lorton, VA 22079

#### Manufacturer

R-stud, LLC 10580 Donald Rd, NE P.O. Box 692 Donald, OR 97020 T: (888) 241-1985

#### **Architect**

Perkins + Will 1250 24<sup>th</sup> Street, NW, Suite 800 Washington, DC 20037 T: (202) 737-1020











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### R-STUD, LLC

#### R-STUD SLOTTED STEEL FRAMING

The patented R-stud is the lightest, quietest, strongest, most cost effective, energy saving steel stud available on the market today. R-stud is interchangeable with conventional metal framing systems. It is manufactured with supplemental flanges (openings) every foot that make it much stronger than conventional steel studs. The larger openings also allow for quick and easy installation of utilities. The acoustical test results prove R-stud's performance to be significantly higher than generic steel studs. R-stud can achieve a 50 STC (Sound Transmission Class) with just one layer of 5/8 inch Type X gypsum on each side, beating generic steel studs by 9 points!



Less gypsum board means less job-site waste. The R-stud significantly outperforms generic steel studs, including greater load bearing capacity, higher limiting wall heights, better acoustical ratings, and 40% less thermal transfer than conventional steel studs. R-stud sources its steel coils from USS-POSCO in Pittsburg, California for rolling in our manufacturing facility in Donald, Oregon. Our coils contain approximately 34.2% recycled steel. Approximately 19.8% is Post-consumer content, while Pre-consumer content is approximately 14.4%. Steel is one of the most sustainable building materials in the world. It is recycled content, recyclable, durable, safe, zinc coated, dimensionally stable and strong, as well as not susceptible to rot, termites, or mold.

DECLARE ID RSD-1001
LICENSE EXPIRATION 01 MAR 2020
DECLARATION STATUS RED LIST FREE
FINAL ASSEMBLY LOCATION DONALD, OR, USA
LIFE EXPECTANCY 100 YEARS
END OF LIFE 100% RECYCLABLE
VOC CONTENT IN G/L N/A
CDPH STANDARD METHOD V1.1 COMPLIANT N/A

#### **INGREDIENT LIST**

COMPONENT	INGREDIENT NAME	CAS#	%	SOURCE
Steel Framing	Steel A1003 and A653	N/A	100%	

### **COMPANY INFORMATION**

R-stud, LLC PO Box 692 10580 Donald Rd. NE Donald, OR 97020

PHONE: 888-241-1985 EMAIL: patrick@rstud.com





P.O. Box 692 Donald, OR 97020 888-241-1985

Mr. Beiler,

R-stud is pleased to provide Capitol Building Supply with information regarding our high-performance steel studs for use in the Perkins & Will Project in Washington DC. In addition to R-stud's superior sound and energy transmission qualities, along with increased strength, R-stud also prides itself in being a leader in the marketplace on producing a product manufactured to a rigorous environmental performance standard. R-stud sources steel coils from only American manufacturers, and our coils contain approximately 34.2% recycled steel. Approximately 19.8% is Post-consumer content, while Pre-consumer content is approximately 14.4%. Because of the design and geometry of our supplemental flanges, R-stud utilizes less steel and, therefore, reduces the amount of embodied carbon. Our thermally broken steel studs are also recognized as "Red List-compliant" or "Red List-free" pursuant to the Living Building Challenge (LBC) requirements.

As an industry standard, steel sheet coils are galvanized at steel mills, and then an additional passivation coating (known as "chem treat") is applied at the steel mill before it is shipped to customers. The purpose of this chem treat is to minimize storage stain or "white rust" associated with the corrosion of galvanized sheet products, while the steel sheet coils are in rolled form up until the coils are slit and rolled to produce steel framing studs. This additional passivation coating contains Chromium VI (#9 on the Living Building Challenge "Red List"), which is less expensive and readily available with shorter lead times than an alternative, Chromium VI-free treat. R-stud produces their product with a Red List-Free chem treat, known as "RoHS Compliant Chemical Treatment -SDS Gardolene D6812."

Again, we thank you for the opportunity to work with you on this project, and we are happy to answer any further questions to the extent that they may arise.

Sincerely,

Michelle K. Sieving Sr. Advisor - Sustainability

Michell L. Renry

R-stud, LLC



#### **Product Submittal Sheet**

## **Specification and Code Information**

This submittal is for Engineers, Architects, Contractors, and Professionals for the purpose of submitting R-stud products for review and approval.

**Specification and Code:** 2012 and 2015 International Building Code (IBC) North American Specification for the Design of Cold Formed Steel Structural Members, NASPEC.

Gypsum Association Fire Resistance Design Manual Underwriters Laboratories, Inc.

### **Material Specifications**

R-stud products are cold-formed shaped manufactured from steel coils meeting ASTM A653/A653M or ASTM A1003/A1003M Specifications from Grade 50 to Grade 55 with material thicknesses from 18 mil (0.0179 inches) to 60 mil (0.060 inches). For material strength, members shall be marked legibly in the web identifying the material yield strength.

#### **Corrosion Protection**

R-stud products have protective coating specified as G60 and G90 coating designations. Material thicknesses from 18 to 43 mil have a minimum of G60 coating, and 54 to 60 mil have a minimum of G90 coating.

#### **Design Specifications**

R-stud products are designed in accordance with 2001 NASPEC and 2004 Supplement Specifications and/or 2007 NASPEC and 2010 Supplement Specifications.

#### **Material Tolerances**

R-stud products comply with manufacturing tolerances listed in ASTM C955 for structural members and ASTM C645 for non-structural framing members.

#### **Product Identification**

R-stud products are identified with legible stamps spaced at a maximum of 24 inches on center located on the web of the framing member in accordance with ASTM C654, C955, A1003, and AISI S102-07 Specifications.

### **Design Specifications**

R-stud products are designed in accordance with 2001 NASPEC and 2004 Supplement Specifications and/or 2007 NASPEC and 2010 Supplement Specifications.



#### Material Tolerances

R-stud products comply with manufacturing tolerances listed in ASTM C955 for structural members and ASTM C645 for non-structural framing members.

### **Product Identification**

R-stud products are identified with legible stamps spaced at a maximum of 24 inches on center located on the web of the framing member in accordance with ASTM C654, C955, A1003, and AISI S102-07 Specifications.

R-stud products are in accordance with the following referenced **AISI** (American Iron and Steel Institute; Washington, DC) and **ASTM** (American Society for Testing and Materials; West Conshohocken, PA) structural and material codes:

AISI \$100-12, North American Specification for the Design of Cold-Formed Steel Structural Members; 2012.

AISI S201-07, North American Specification for the Design of Cold-Framing – Product Data; 2007.

AISI S902-08, Stub-Column Test Method for Effective Area of Cold-Formed Steel Columns; 2008.

**AISI S909-13**, Standard Test Method for Determining the Web Crippling Strength of Cold-Formed Steel Beams; 2013.

**ASTM A1003/A1003M**, Standard Specification for Sheet Steel, Carbon, Metallic and Non-Metallic Coated for Cold-formed Framing Members.

**ASTM A370-17**, Standard Test Method and Definitions for Mechanical Testing of Steel Products; 2017.

**ASTM A653/A653M**, Standard Specification for Steel Sheet Zinc-coated (Galvanized) or Zinc-Iron-coated (Galvanized) by the Hot-Kip Process.

**ASTM A792/A792M**, Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.

**ASTM C1002**, Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.

**ASTM C1513**, Standard Specification for Steel Tapping Screws for Cold-formed Steel Framing Connections.

**ASTM C645**, Standard Specification for Non-structural Steel Framing Members.

**ASTM C754**, Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products.



**ASTM C954**, Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs from 0.033 to 0.112-inch Thickness.

**ASTM C955**, Standard Specification for Load-Bearing (Transverse and Axial) Steel Studs, Runners (Tracks), and Bracing or Bridging for Screw Application of Gypsum Panel Products and Metal Plaster Bases.

AWS D1.3, Structural Welding Code-Sheet Steel, 1998 Edition; American Welding Society (AWS), Miami, FL.

**CAN/CSA-S136**, North American Specification for the Design of Cold-formed Steel Structural Members; Canadian Standards Association (CSA), Mississauga, Ontario, Canada.

**ICC-ES AC46**, Acceptance Criteria for Cold-Formed Steel Framing Members; International Code Council Evaluation Service, Inc. (ICC-ES), Whittier, CA, 2015.

# R-stud (Structural and Non-Structural)

R-stud is registered as Red List Free by the Living Future Institute: https://access.living-future.org/r-stud-slotted-steel-framing

R-stud sources its steel coils from USS-POSCO in Pittsburg, California. According to research by the Steel Recycling Institute, the coils used by R-stud contain approximately 34.2% recycled content.

R-stud Post-consumer scrap accounts for approximately 19.8% by weight. R-stud Pre-consumer scrap accounts for approximately 14.4% by weight.

#### **Description**

Both Non-Structural and Structural R-studs are S-members (C-sections) and used as non-load bearing studs and joists. The are available in depths (webs) ranging from 3.625" – 6.000" with widths (flanges) ranging from 1.250" – 2.50." Both Non-Structural and Structural (or Load Bearing) R-Studs, 400\_RS\_162\_30mil\_50ksi\_G60 and 400\_RS\_162\_30mil\_50ksi\_G60 are shown in Figures 1 and 2, respectively.

#### Materials

R-studs are fabricated from 14 to 25-gauge hot dipped galvanized steel. Designated minimum steel thicknesses range from 18 – 60 mil and are made from steel coils conforming to ASTM A653 SS Grade 50, Class 1, or Grade 55 mod 57, with a minimum G60 galvanized coating (other coatings [40, 90] are available) or ASTM A1003 Non-Structural Grade 33, Grade 50, or Grade 57.

### Color Codes for Mil Callouts

Mil Color

18 Clear

30 White

43 Yellow

54 Green

60 Orange

### **ASTM Code Standards**

**IBC** 

2009/2012

AISI

NASPEC 2007

### **Meets or Exceeds**

ASTM C754 and ASTM C645 ASTM E119 and E90 ASTM A370 ASTM A1003 ASTM C1513

Manufacturer Contact Information: (888) 241-1985

Manufacturing Plant: 10580 Donald Road, NE, Donald, Oregon 97020

Mailing Address: P.O. Box 692, Donald, Oregon, 97020

Member Gauge	Design Thickness	Minimum Thickness
25	0.0188	0.0179
18 EQ	0.0312	0.0296
16 EQ	0.0451	0.0428
14 EQ	0.0566	0.0538
14	0.0713	0.0677

### The R-stud is identified through the nomenclature:

600 is the stud depth, 600 = 6 inches.

RS denotes the R-stud.

162 calls out the flange width, 162 = 1.625 inches.

30 mil and 43 mil are the base steel thickness in mils (1000's of an inch).

50 Ksi (50,000 psi) is the yielding strength of the steel in thousands of pounds per square inch.

G60 is the galvanization rating.

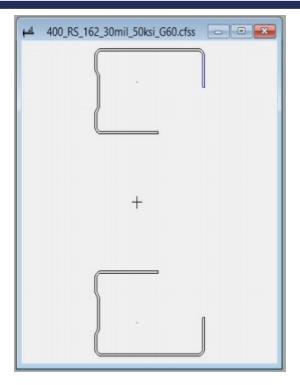


Figure 1. The 400\_RS\_162\_30mil\_50ksi\_G60 R-stud.

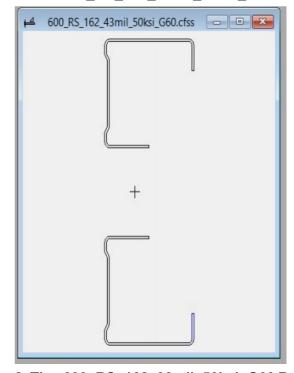


Figure 2. The 600\_RS\_162\_30mil\_50ksi\_G60 R-stud.

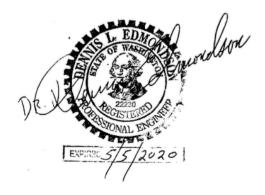
# Engineering Technology Consultants Corporation POB 244, Marysville, WA 98270 425-210-5353

### To Whom it may concern:

The attached Combined Loads Tables are based on testing data provided by ICC NTA, LLC, 305 N Oakland Ave., Nappanee, IN 46550. The calculations performed and checked by Dr. Dennis Edmondson, PhD, PhD, PE, and Dr. Dave Wood, PhD based in AISI and AISC codes.

It was found from testing results that Rstud's geometric shape contributed to its section modulus adding additional rigidity presenting a unique increase in efficiency of a steel stud. In addition, the cold working fabrication present in Rstud design per AISI Cold Working analysis increased the 50ksi yield strength steel material tested to over 60ksi yield strength providing significant strength increase allowing 36ksi working yield strength to be used opposed to 30ksi working yield strength for 50ksi steel.

Dr. Dennis Edmondson, PhD, PhD, PE





# **Product Data Sheet**

U.S. Patent # US7866112 U.S. Patent # US7743578 U.S. Patent # US8424266

**Product category:** R-stud 19 mil Drywall Stud 600RS162-19 50KSI G60 6" x 1-5/8" R-stud

Coating: G60 Color coding: None

#### **Geometric Properties**

Web depth6.000 inWeight0.64851 lb/ftFlange width1.625 inWeb opening length9-13/16 inStiffening lip0.500 inWeb opening width2-3/16 inDesign thickness0.0202 inMinimum thickness0.0190 in

Yield stress, Fy 50 Ksi

#### **Gross Section Properties of Full Section, Strong Axis\***

Cross sectional area (A) 0.20184 in^2 1.0900 in^4 Moment of inertia (Ix) Radius of gyration (Rx, r1) 2.3239 in Moment of inertia (lv) 0.0626 in^4 Radius of gyration (Ry, r2) 0.5570 in Max bending moment Ix (Maxo) 8.7389 k-in Max bending moment Iv (Mayo) 2.0061 k-in Allowable shear force in web (Vax) 0.9411 k

### Tension/Compression Properties\*

Warping constant (Cw)

Distance from shear center to neutral axis (Xo)

Radii of gyration (Ro)

Torsional flexural constant (Beta)

Compression Pao (max)

Tension Tao (Ta)

Unbraced Length (Lu)

Warping

0.028523 in^6

-0.8849 in

2.5483 in

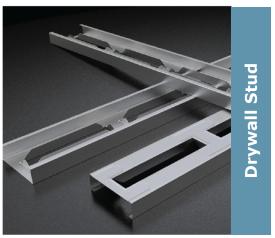
FEA-in^4

3.9183 k

7.0642 k

Full / Non-braced

Fully Braced Strength (CFS) \*CFS result



Web openings (not punch-outs) formed from web every 12 in. with Stamping at bridge every 12 in.

### ASTM & Code Standards:

- ✓ ATI/Intertek CCRR 1073
- ✓ IBC 2012 Compliant
- ✓ AISI S-100 & S220-11
- ✓ ASTM E119, E72, E90
- ✓ ASTM AC86, C645, & C745
- ✓ UL 263

#### Notes:

- Calculated properties are based on AISI S100-12, North American Specifications for Cold-Formed Steel Structure Members and ICC-ES AC46-2015, Acceptance Criteria for Cold-Formed Steel Framing Members.
- Effective properties herein incorporate the increased strength from cold working of the steel while forming. We only use 50Ksi coils.
- Tabulated gross properties, including torsional properties, are based on the added cross section properties of the web openings. R-studs do not have punch-outs.
- Allowable moment includes cold work of forming.
- Allowable moment is taken as the lowest value based on local or distortional buckling. Distortional buckling strength is based on K-phi=0
- For deflection calculations, use the effective moment of inertia.
- Web openings are every 12 inches and are 9-13/16 inches long with flanges being 0.94 inches tall and corners of the web openings enhanced.

**Sustainability:** R-stud sources its steel coils from USS-POSCO in Pittsburg, California for rolling in our manufacturing facility in Donald, Oregon. Our coils contain approximately 34.2% recycled steel. Approximately 19.8% is Post-consumer content, while Preconsumer content is approximately 14.4%. R-studs are listed as "Red List Free" by the International Living Future Institute. Steel is one of the most sustainable building materials in the world. It is recycled content, recyclable, durable, safe, zinc-coated, dimensionally stable and strong, as well as not susceptible to rot, termites, or mold.

#### **Supported Documentation**

- 2016 AISI ASD, LRFD, and LSD
- 2012 AISI ASD, LRFD, and LSD
- 2010 AISI ASD, LRFD, and LSD
- 2007 AISI ASD, LRFD, and LSD
- 2004 AISI ASD, LRFD, and LSD
- 2001 AISI ASD, LRFD, and LSD
- 1999 AISI ASD and LRFD & 2002 ASCE ASD and LRFD (stainless steel)

Project InformationContractor InformationArchitect InformationName:Name:Name:Address:Contact:Contact:Phone:Phone:Fax:Fax:



# **Product Data Sheet**

U.S. Patent # US7866112 U.S. Patent # US7743578 U.S. Patent # US8424266

**Product category:** R-stud 19 mil Drywall Stud 600RS162-19 50KSI G60

6" x 1-5/8" R-stud

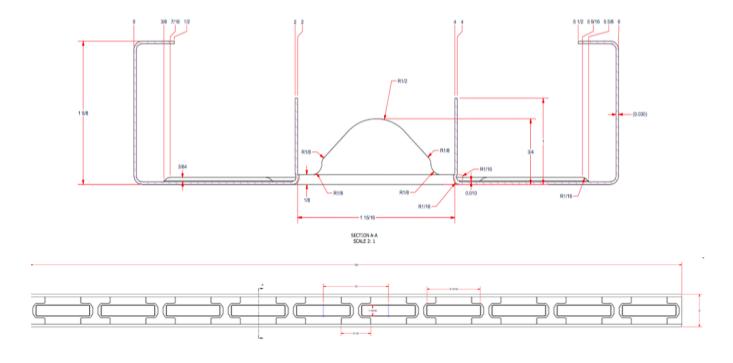
#### **Limiting Wall Heights**

Spacing		5 psf			7.5 psf			10 psf	
(inches)	L/120	L/240	L/360	L/120	L/240	L/360	L/120	L/240	L/360
16	28'-0"	25′-11″	23′-7″	22′-3″	20′-7″	18'-8"	19'-5"	18'-0"	16'-4"
24	24'-5"	22′-8″	20′-7″	19'-5"	18'-0"	16'-4"	17′-1″	15′-8″	14'-3"

#### Table Notes:

- Allowable composite limiting heights were determined from AC86-2012 testing by Intertek Testing / Architectural Testing, Inc.
- The composite limiting heights tables provided above are based on a single layer of Type X gypsum board from the following manufacturers, American, CertainTeed, Georgia Pacific, National, PABCO, and USG.
- The gypsum is to be applied full height in the vertical orientation to each stud flange and installed in accordance with ASTM C754-2004 using a minimum of No. 6 Type S Drywall spaced as listed below:
  - Screws spaced a minimum of 16 inches on-center to framing members spaced at 12 or 16 inches on-center.
  - Screws spaced a minimum of 12 inches on-center to framing members spaced at 24 inches on-center.
- No fasteners are required for attaching the stud to the track except as detailed in ASTM C754-2008.

#### **Profile**



Project Information	Contractor Information	Architect Information
Name:	Name:	Name:
Address:	Contact:	Contact:
	Phone:	Phone:
	Fax:	Fax:



# **Product Data Sheet**

U.S. Patent # US7866112 U.S. Patent # US7743578 U.S. Patent # US8424266

Product category: R-stud 19 mil Drywall Stud 400RS162-19 50KSI G60 4" x 1-5/8" R-stud

Coating: G60 Color coding: None

#### **Geometric Properties**

Yield stress, Fy 50 Ksi

#### Gross Section Properties of Full Section, Strong Axis\*

Cross sectional area (A) 0.14385 in^2 0.3899 in^4 Moment of inertia (Ix) Radius of gyration (Rx, r1) 1.6464 in Moment of inertia (lv) 0.0459 in^4 Radius of gyration (Ry, r2) 0.5649 in Max bending moment Ix (Maxo) 4.5304 k-in Max bending moment Iv (Mayo) 1.3379 k-in Allowable shear force in web (Vax) 0.7307 k

#### Tension/Compression Properties\*

Warping constant (Cw)

Distance from shear center to neutral axis (Xo)

Radii of gyration (Ro)

Torsional flexural constant (Beta)

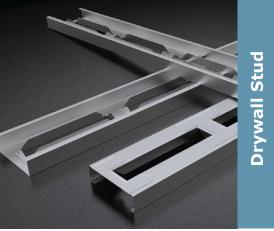
Compression Pao(max)

Tension Tao (Ta)

Unbraced Length (Lu)

Full / Non-braced

Fully Braced Strength (CFS) \*CFS result



Web openings (not punch-outs) formed from web every 12 in. with Stamping at bridge every 12 in.

#### ASTM & Code Standards:

- ✓ ATI/Intertek CCRR 1073
- ✓ IBC 2012 Compliant
- ✓ AISI S-100 & S220-11
- ✓ ASTM E119, E72, E90
- ✓ ASTM AC86, C645, & C745
- / UL 263

#### Notes:

- Calculated properties are based on AISI S100-12, North American Specifications for Cold-Formed Steel Structure Members and ICC-ES AC46-2015, Acceptance Criteria for Cold-Formed Steel Framing Members.
- Effective properties herein incorporate the increased strength from cold working of the steel while forming. We only use 50Ksi coils.
- Tabulated gross properties, including torsional properties, are based on the added cross section properties of the web openings. R-studs do not have punch-outs.
- Allowable moment includes cold work of forming.
- Allowable moment is taken as the lowest value based on local or distortional buckling. Distortional buckling strength is based on K-phi=0
- For deflection calculations, use the effective moment of inertia.
- Web openings are every 12 inches and are 9-13/16 inches long with flanges being 0.94 inches tall and corners of the web openings enhanced.

**Sustainability:** R-stud sources its steel coils from USS-POSCO in Pittsburg, California for rolling in our manufacturing facility in Donald, Oregon. Our coils contain approximately 34.2% recycled steel. Approximately 19.8% is Post-consumer content, while Preconsumer content is approximately 14.4%. R-studs are listed as "Red List Free" by the International Living Future Institute. Steel is one of the most sustainable building materials in the world. It is recycled content, recyclable, durable, safe, zinc-coated, dimensionally stable and strong, as well as not susceptible to rot, termites, or mold.

### **Supporting Documentation**

- 2016 AISI ASD, LRFD, and LSD
- 2012 AISI ASD, LRFD, and LSD
- 2010 AISI ASD, LRFD, and LSD
- 2007 AISI ASD, LRFD, and LSD
- 2004 AISI ASD, LRFD, and LSD
- 2001 AISI ASD, LRFD, and LSD
- 1999 AISI ASD and LRFD & 2002 ASCE ASD and LRFD (stainless steel)

 Project Information
 Contractor Information
 Architect Information

 Name:
 Name:
 Name:

 Address:
 Contact:
 Contact:

 Phone:
 Phone:

 Fax:
 Fax:



# **Product Data Sheet**

U.S. Patent # US7866112 U.S. Patent # US7743578 U.S. Patent # US8424266

Product category: R-stud 19 mil Drywall Stud 400RS162-19 50KSI G60

4" x 1-5/8" R-stud

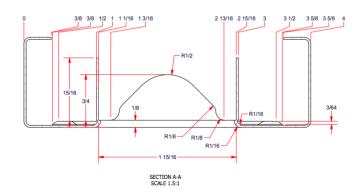
#### **Limiting Wall Heights**

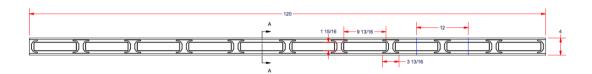
Spacing	5 psf		7.5 psf			10 psf			
(inches)	L/120	L/240	L/360	L/120	L/240	L/360	L/120	L/240	L/360
12									
16	24′1″	19′1″	16′8″	21′10″	16′8″	14′7″	19'10"	15′2″	13′3″
24	21′0″	17′8″	14′7″	19′1″	14′7″	13′3″	16'8"	13′3″	11′7″

#### Table Notes:

- Allowable composite limiting heights were determined from AC86-2012 testing by Intertek Testing / Architectural Testing, Inc.
- The composite limiting heights tables provided above are based on a single layer of Type X gypsum board from the following manufacturers, American, CertainTeed, Georgia Pacific, National, PABCO, and USG.
- The gypsum is to be applied full height in the vertical orientation to each stud flange and installed in accordance with ASTM C754-2004 using a minimum of No. 6 Type S Drywall spaced as listed below:
  - Screws spaced a minimum of 16 inches on-center to framing members spaced at 12 or 16 inches on-center.
  - Screws spaced a minimum of 12 inches on-center to framing members spaced at 24 inches on-center.
- No fasteners are required for attaching the stud to the track except as detailed in ASTM C754-2008.

#### **Profile**







# **Product Data Sheet**

U.S. Patent # US7866112 U.S. Patent # US7743578 U.S. Patent # US8424266

**Product category:** R-stud 18 mil Drywall Stud 362RS162-18 50KSI G60 3-5/8" x 1-5/8" R-stud

Coating: G60 Color coding: Clear

#### **Geometric Properties**

Yield stress, Fy 50 Ksi

#### Gross Section Properties of Full Section, Strong Axis\*

Cross sectional area (A) 0.33668 in^2 Moment of inertia (Ix) 0.7567 in^4 Radius of gyration (Rx, r1) 1.4991 in Moment of inertia (lv) 0.1042 in^4 Radius of gyration (Ry, r2) 0.5565 in Max bending moment Ix (Maxo) 10.233 k-in Max bending moment Iv (Mayo) 3.871 k-in Allowable shear force in web (Vax) 2.826 k

#### Tension/Compression Properties\*

Fully Braced Strength (CFS) \*CFS result

Warping constant (Cw)  $0.016409 \text{ in}^6$ Distance from shear center to neutral axis (Xo) -0.9597 inRadii of gyration (Ro) 1.8649 inTorsional flexural constant (J, Beta) FEA-J =  $0.000827 \text{ in}^4$ Compression Pao(max) 7.564 kTension Tao (Ta) 11.784 kUnbraced Length (Lu) Full / Non-braced Web openings (not nunch-outs) formed from web

Web openings (not punch-outs) formed from web every 12 in. with Stamping at bridge every 12 in.

#### ASTM & Code Standards:

- ✓ ATI/Intertek CCRR 1073
- ✓ IBC 2012 Compliant
- ✓ AISI S-100 & S220-11
- ✓ ASTM E119, E72, E90
- ✓ ASTM AC86, C645, & C745
- UI 263

#### Notes:

- Calculated properties are based on AISI S100-12, North American Specifications for Cold-Formed Steel Structure Members and ICC-ES AC46-2015, Acceptance Criteria for Cold-Formed Steel Framing Members.
- Effective properties herein incorporate the increased strength from cold working of the steel while forming. We only use 50Ksi coils.
- Tabulated gross properties, including torsional properties, are based on the added cross section properties of the web openings. R-studs do not have punch-outs.
- Allowable moment includes cold work of forming.
- Allowable moment is taken as the lowest value based on local or distortional buckling. Distortional buckling strength is based on K-phi=0
- For deflection calculations, use the effective moment of inertia.
- Web openings are every 12 inches and are 9-13/16 inches long with flanges being 0.94 inches tall and corners of the web openings enhanced.

**Sustainability:** R-stud sources its steel coils from USS-POSCO in Pittsburg, California for rolling in our manufacturing facility in Donald, Oregon. Our coils contain approximately 34.2% recycled steel. Approximately 19.8% is Post-consumer content, while Preconsumer content is approximately 14.4%. R-studs are listed as "Red List Free" by the International Living Future Institute. Steel is one of the most sustainable building materials in the world. It is recycled content, recyclable, durable, safe, zinc-coated, dimensionally stable and strong, as well as not susceptible to rot, termites, or mold.

#### **Supported Documentation**

- 2016 AISI ASD, LRFD, and LSD
- 2012 AISI ASD, LRFD, and LSD
- 2010 AISI ASD, LRFD, and LSD
- 2007 AISI ASD, LRFD, and LSD
- 2004 AISI ASD, LRFD, and LSD
- 2001 AISI ASD, LRFD, and LSD
- 1999 AISI ASD and LRFD & 2002 ASCE ASD and LRFD (stainless steel)

 Project Information
 Contractor Information
 Architect Information

 Name:
 Name:
 Name:

 Address:
 Contact:
 Contact:

 Phone:
 Phone:
 Fax:



P.O. Box 692 10580 Donald Rd. NE Donald, OR 97020 888-241-1985

**Product Data Sheet** 

U.S. Patent # US7866112 U.S. Patent # US7743578 U.S. Patent # US8424266

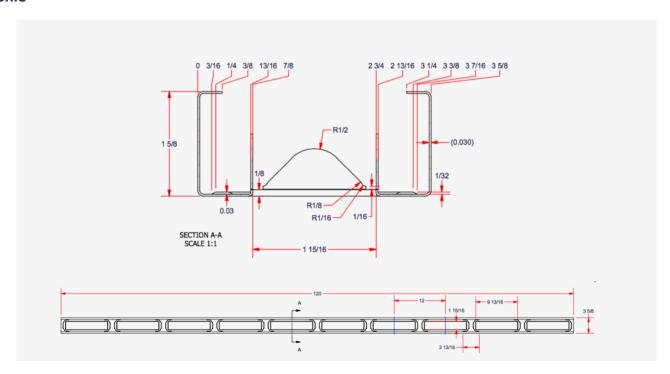
R-stud 18 mil Drywall Stud **Product category: Product name:** 362RS162-18 50KSI G60 3-5/8" x 1-5/8" R-stud

#### **Limiting Wall Heights**

Spacing	5 psf			7.5 psf			10 psf		
(inches)	L/120	L/240	L/360	L/120	L/240	L/360	L/120	L/240	L/360
16	19'- 9"	15"- 8"	13'- 9"	17′-3″	13′-9″	12'-0"	15′-8″	12"-6"	10"-11"
24	17"-3"	13"-9"	12'-0"	15'-1"	13'-0"	10'-6"	13'-9"	10'-11"	9'-6"

- Allowable composite limiting heights were determined from AC86-2012 testing by Intertek Testing / Architectural Testing, Inc.
- The composite limiting heights tables provided above are based on a single layer of Type X gypsum board from the following manufacturers, American, CertainTeed, Georgia Pacific, National, PABCO, and USG.
- The gypsum is to be applied full height in the vertical orientation to each stud flange and installed in accordance with ASTM C754-2004 using a minimum of No. 6 Type S Drywall spaced as listed below:
  - Screws spaced a minimum of 16 inches on-center to framing members spaced at 12 or 16 inches on-center.
  - Screws spaced a minimum of 12 inches on-center to framing members spaced at 24 inches on-center.
- No fasteners are required for attaching the stud to the track except as detailed in ASTM C754-2008.

#### **Profile**



Project Information	Contractor Information	Architect Information	
Name:	Name:	Name:	
Address:	Contact:	Contact:	
	Phone:	Phone:	
	Fax:	Fax:	
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