August 12, 2021

Re: Simpson Strong-Tie® Deck-Drive™ DSV and Strong-Drive™ CSV Construction Screws

Simpson Strong-Tie #10 Deck-Drive DSV wood screws are designed for preservative-treated decking applications and can also be used for general framing and construction with wood and engineered wood products. Quik Guard® coating on the DSV screws provides corrosion resistance for exterior and certain preservative-treated wood applications. The CSV construction screws have the same features and properties as the DSV screws and are intended to be used only in dry service, low corrosion applications. The CSV screws have an electroplated yellow-zinc coating that provides corrosion resistance for interior applications. The DSV and CSV screws have a 6-lobe drive with flat head and do not require predrilling for softer woods. The screws have been tested and evaluated in accordance with ICC-ES Acceptance Criteria AC233 (*Acceptance Criteria for Dowel-type Threaded Fasteners Used in Wood*), and are load rated for shear, pull-through and withdrawal resistance. This letter provides load information for the DSV and CSV screws. See Figures 1 and 2 for features of the DSV and CSV screws.

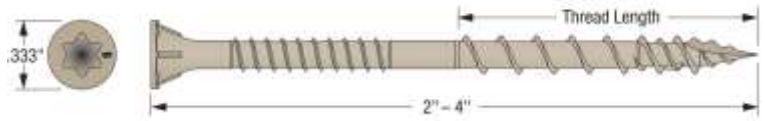

Figure 1: Deck-Drive DSV Wood Screws

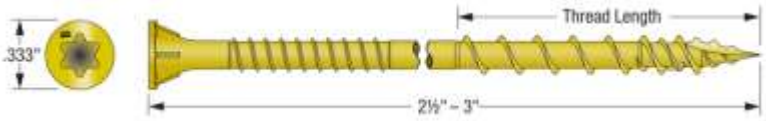

Figure 2: Strong-Drive CSV Construction Screws

Allowable Shear Loads

Size x Length (in.)	Model No.	Thread Length (in.)	DFL/SP Reference Allowable Shear Load (lb.)				SPF/HF Reference Allowable Shear Load (lb.)			
			Side Member Thickness (in.)				Side Member Thickness (in.)			
			1.5	2.0	2.5	3.0	1.5	2.0	2.5	3.0
#10 x 2½	DSV212 / CSV212	1.50	106	-	-	-	83	-	-	-
#10 x 3	DSV3 / CSV3	1.50	173	99	-	-	131	80	-	-
#10 x 3½	DSV312	2.00	173	173	99	-	131	131	80	-
#10 x 4	DSV4	2.50	173	173	173	99	131	131	131	80

1. Allowable loads are based on full penetration into the main member. Full penetration is the screw length minus the side member thickness.
2. Allowable loads are shown at the wood load duration factor of $C_D = 1.0$. Loads may be increased for load duration per the building code up to a $C_D = 1.6$. Tabulated values must be multiplied by all applicable adjustment factors per the NDS; for DSV in-service moisture content greater than 19%, use $C_M = 0.62$.
3. Loads are based on installation into the side grain of the wood with the screw axis perpendicular to the face of the member.
4. Loads are based on tests of connections made with same species as main and side members. For connections with mixed species, use the loads for the species with the lower specific gravity.
5. Engineered wood must have a minimum modulus of elasticity grade of 0.80E and have a minimum equivalent specific gravity at least 0.50 to use the DFL/SP values or 0.42 to use the SPF/HF values.

Allowable Withdrawal and Pull-Through Loads

Size x Length (in.)	Model No.	Thread Length (in.)	Reference Allowable Withdrawal, W (lb./in.)		Reference Maximum Withdrawal, W_{max} (lb.)		Reference Pull-Through, (lb.)	
			DFL/SP	SPF/HF	DFL/SP	SPF/HF	DFL/SP	SPF/HF
#10 x 2	DSV2	1.25	121	94	150	115	174	154
#10 x 2½	DSV212 / CSV212	1.50			180	140		
#10 x 3	DSV3 / CSV3	1.50			180	140		
#10 x 3½	DSV312	2.00			240	190		
#10 x 4	DSV4	2.50			300	235		

1. The tabulated Reference Allowable Withdrawal design value, W, is in pounds per inch of the thread penetration into the side grain of the main member.
2. The tabulated Reference Maximum Withdrawal design value, W_{max}, is in pounds where the entire thread length is embedded into the side grain of the main member.
3. Reference withdrawal design values, W and W_{max}, are shown at C_D = 1.0. Loads may be increased for load duration per the building code up to C_D = 1.6. Tabulated values must be multiplied by all applicable adjustment factors from the NDS; For DSV in-service moisture content greater than 19%, use C_M = 0.70.
4. Embedded thread length is that portion of the end threads in the main member including the screw tip.
5. Reference Pull-Through values are based on pull-through of a 1½-in.-thick side member.
6. Engineered wood must have a minimum modulus of elasticity grade of 1.55E and have a minimum equivalent specific at least 0.50 to use the DFL/SP values or 0.42 to use the SPF/HF values.

Connection Geometry

Condition			Minimum Distance or Spacing (in.)	Reduction Factor
Edge distance	Perpendicular-to-grain loading		3/4	0.91
	Parallel-to-grain loading		1/2	1.00
End distance	Perpendicular-to-grain loading		4	0.91
	Parallel-to-grain loading		4	1.00
Spacing between fasteners in a row	Perpendicular-to-grain loading		2	0.75
	Parallel-to-grain loading		2	1.00
Spacing between row	Perpendicular-to-grain loading	Non-staggered row	1	0.75
		Staggered rows	1	1.00
	Parallel-to-grain loading	Non-staggered row	1	0.88
		Staggered rows	1	1.00

1. Edge distances, end distances, and spacing of the screws must be sufficient to prevent splitting of the wood, or as required by this table, or when applicable as recommended by the structural composite lumber manufacturer, whichever is the most restrictive.
2. Allowable shear loads shall be multiplied by the applicable tabulated reduction factors when used in the corresponding geometry.

The information in this letter is valid until **8/31/2023**, when it will be re-evaluated by Simpson Strong-Tie. Please visit strongtie.com for additional pertinent information. If you have questions or need further assistance regarding this matter, please contact the Simpson Strong-Tie Engineering Department at (800) 999-5099.

Sincerely,
SIMPSON STRONG-TIE COMPANY INC.