

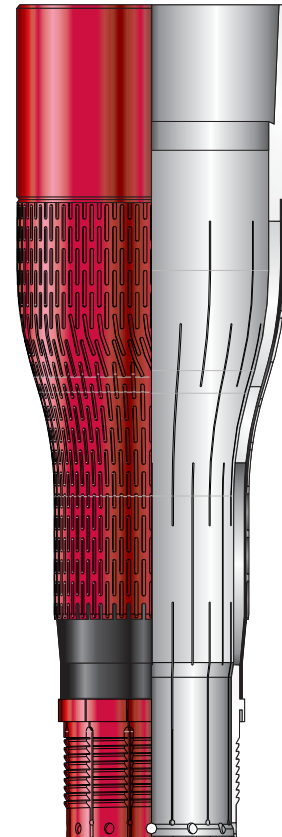


ESS® Expandable Top Connector

Weatherford's *ESS* expandable top connector (ETC) is used to connect an *ESS* expandable sand screen assembly with the blank space-out pipe at the top of the *ESS* system. In addition to serving as a crossover device, the ETC provides an area for initiating expansion of the *ESS* string.

The ETC is a short, diameter-reducing section of pre-formed slotted base pipe to which overlapping weave layers are attached. An external layer of perforated, expandable shroud protects the filter media from damage during deployment. The ETC has a VAM FJL® box connection up and an integral slotted pin connection down. The integral pin connection allows contribution of flow over the entire ETC slotted length.

ESS connections are made using a special micro-grip tool and then locked in position with anti-rotation lock screws. After all of the *ESS* joints are made up, the ETC is screwed into the top of the last *ESS* joint. Conventional blank pipe is then run to space out either the next *ESS* section in a multizone completion or the packer/liner hanger, as required. Expansion of the *ESS* string is achieved from the surface by using either a low-pressure ACE™ axial compliant expansion tool or a tapered expansion cone.



Features, Advantages and Benefits

- Compliant expansion eliminates the screen/wellbore annulus for enhanced sand-control integrity and borehole stabilization.
- The large post-expansion ID reduces flowing friction, thereby optimizing production.
- The large open-to-flow area and low delta P filter media improve well productivity and inflow performance.
- The integral pin connection allows contribution of flow over the entire ETC slotted length.
- The box connection uses premium threads to standardize connectivity, enhancing operational efficiency.



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Specifications

General Specifications

ESS size (in.)	4	4-1/2	5-1/2
Box connection ^a	5 1/2-in., 15.5-lb/ft VAM FJL®		7 5/8-in., 29.7-lb/ft VAM FJL
Overall length (in./mm)	39.5 1,004		
Pre-expansion running OD (in./mm)	5.63 142.9	5.75 146.1	7.64 194.1
Pre-expansion running ID (in./mm)	3.38 85.8	3.84 97.5	4.80 122.0
Post-expansion typical OD range ^b (in./mm)	5.50 to 6.06 139.7 to 153.9	5.88 to 6.50 ^c 149.2 to 165.1	8.00 to 8.83 203.2 to 224.3
		6.13 to 6.77 ^d 155.7 to 172.0	
Post-expansion final ID (in./mm)	4.85 123.2	4.94 125.5	6.81 173.0

^aIntegral box connection × ESS pin

^bBased on expansion with the ACE™ tool

^cExpansion with 4 1/2-in. OD tool

^dExpansion with 4 3/4-in. OD tool

Standard Materials*

Premium connector	25Cr
Base pipe	316L
ESS connector	25Cr
Weave	316L
Outer shroud (perforated plate)	316L

*Alternative metallurgies available for more aggressive well environments

Filtration Media

Weave aperture (µm)	270	230	150	120
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VAM FJL is a registered trademark of Vallourec Mannesmann Oil & Gas France Corporation.