

WELDABILITY

EXCELLENT WELDABILITY OF THE BASE MATERIAL

For endurance dynamic, a micro-alloyed, thermomechanically rolled steel (SxxxM) with a particularly low content of carbon (C), phosphorus (P), sulphur (S) and nitrogen (N) is used. Due to the low content of these elements, which are disadvantageous for welding processing, the weldability of the used base material is excellent.

In this context, it should be explicitly mentioned that even in the radius area, welding can be performed without limitations. Hydrogen embrittlement, microstructure hardening and ageing phenomena are thus reduced to a negligible degree. Preheating is generally not necessary due to the low carbon content.

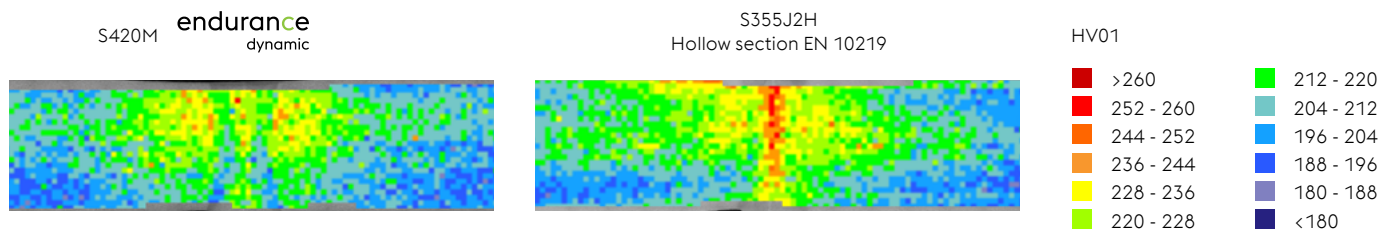
Typical alloy content

Figures in (%)

	C	P	S	N
S420M endurance dynamic, typical value	0,078	0,007	0,001	0,004
S420MC (EN10149-2), acc. to standard	≤ 0,12	≤ 0,025	≤ 0,015	-
S355J2H (EN 10219), typical value	0,170	0,012	0,004	0,005
S355J2H (EN 10210), typical value	0,160	0,015	0,002	0,005

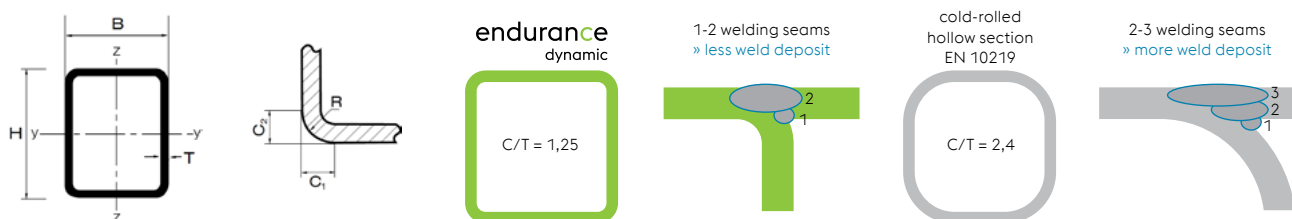
HOMOGENEOUS LONGITUDINAL WELD SEAM

Low carbon contents ensure that there is less hardening in the weld seam. This results in a homogeneous hardness profile across the weld seam and the formation of a metallurgical notch is reduced, resulting in improved fatigue strength.



EFFICIENT WELDING

A very good degree of purity and the specially adjusted homogeneous microstructure further improve formability. A C/T ratio of up to 1.25 can consequently be achieved.



Calculation example: 100mm long weld seam, pipe joint, hollow profile 100x100x8mm

	Hollow section EN 10219	endurance dynamic
Required seam volume	13,8 cm ³	7,8 cm ³
Required number of layers	3	2
Total welding time	1,4 min	0,6 min

By using endurance dynamic with a narrow chamfer of the radii, a reduction of 43% in filler metal and 56% in actual welding time can be achieved