



This document specifies the new validation specifications for the WorldSID 50th agreed and recommended by WorldSID Task Group in October 2013 and endorsed by ISO Working Group 5 in November 2013. The specification corridors below supersede those in ISO 15830 (2nd edition, May 2013) Road vehicles – Design and performance specifications for the WorldSID 50th percentile male side-impact dummy, Part 2: Mechanical subsystems.

Note :

All specification changes take effect immediately in all new production and re-validations and remain in effect until the publication of ISO TS 15830, Part 5. All other specifications in ISO 15830-2 (2nd edition, May 2013) that are not revised below are still valid.

4.1 Head

4.1.3 Validation

Table 1 — WorldSID head validation specifications

Frontal drop		
	ISO 15830-2: May 2013	Recommended by WorldSID Task Group Oct. 2013
Variable		
Peak resultant acceleration (G)	225 to 275	205 to 255
Peak lateral acceleration (a_y) (G)	< 15	< 15
Maximum percentage, subsequent-to-main peak (%)	< 10	< 10
Lateral drop		
	ISO 15830-2: May 2013	Recommended by WorldSID Task Group Oct. 2013
Variable		
Peak resultant acceleration at CG (G)	99 to 121	104 to 123
Peak longitudinal acceleration (a_x) (G)	< 15	< 15
Maximum percentage, subsequent-to-main peak (%)	< 10	< 10

4.2 Neck

4.2.3 Validation

Table 2 — WorldSID neck validation specifications

No new recommendations. The specifications in ISO 15830-2 (2nd edition, May 2013) are still valid.

4.3 Thorax/abdomen/shoulder

4.3.3 Validation

4.3.3.1 Shoulder

Table 3 — WorldSID shoulder validation specifications

Variable	ISO 15830-2: May 2013 is still valid
Pendulum velocity (m/s)	4.3 ± 0.1
Peak pendulum force (kN)	2.6 to 3.3
Peak shoulder rib deflection (mm)	35 to 45

4.3.3.2 Thorax with half arm

Table 4 — WorldSID thorax with half-arm validation specifications

No new recommendation. The specifications in ISO 15830-2 (2nd edition, May 2013) section 4.3.3.2 are still valid.

Note :

Replacing the thorax with half arm validation test by a “single-rib validation” and a single half arm validation is under discussion. Until a final decision is made, the specifications in ISO 15830-2 (2nd edition, May 2013) section 4.3.3.2 are still valid.

4.3.3.3 Thorax without half arm

Table 5 — WorldSID thorax without arm validation specifications

Variable	ISO 15830-2: May 2013 is still valid
Pendulum velocity (m/s)	4.3 ± 0.1
Peak pendulum force (kN)	3.2 to 3.8
Peak T4 acceleration along y axis (G)	14 to 20
Peak T12 acceleration along y axis (G)	14 to 22
Peak thorax rib 1 deflection (mm)	33 to 43
Peak thorax rib 2 deflection (mm)	35 to 43
Peak thorax rib 3 deflection (mm)	32 to 40

4.3.3.4 Abdomen

Table 6 — WorldSID abdomen validation specifications

Variable	ISO 15830-2: May 2013 is still valid
Pendulum velocity (m/s)	4.3 ± 0.1
Peak pendulum force (kN)	2.7 to 3.1
Peak T12 acceleration along y axis (G)	15 to 20
Peak abdomen rib 1 deflection (mm)	33 to 40
Peak abdomen rib 2 deflection (mm)	30 to 36

4.6 Lumbar spine and pelvis

4.6.3 Validation

Table 7 — WorldSID pelvis validation specifications

Variable	ISO 15830-2: May 2013	Recommended by WorldSID Task Group Oct. 2013
Pendulum velocity (m/s)	6.7 ± 0.1	6.7 ± 0.1
Peak pendulum force (kN)	6.3 to 7.8	6.8 to 8.2
Peak T12 acceleration along y axis (G)	10 to 14	10 to 14
Peak pelvis acceleration along y axis (G)	41 to 51	37 to 47

Section 5.2 Neck

Section 5.2.5 Preparation

5.2.6 Procedure

Table 10 — (Neck) Pendulum arm deceleration pulse

Variable	ISO 15830-2: May 2013	Recommended by WorldSID Task Group Oct. 2013
Pendulum velocity (m/s)	3.4 ± 0.1	3.4 ± 0.1
Velocity change at 4 ms* (m/s)	0.8 to 1.0	0.77 to 1.04
Velocity change at 8 ms* (m/s)	1.6 to 1.9	1.60 to 1.90
Velocity change at 12 ms* (m/s)	2.4 to 3.3	2.43 to 3.29
* T=0 s at initial pendulum contact with honeycomb or alternative products which can be shown to lead to the same results		