§ 572.162

existing under static conditions, there
is no contact between metallic ele-
ments throughout the range of motion
or under simulated crash impact condi-
tions.

(c) The structural properties of the
dummy are such that the dummy must
conform to Subpart S in every respect
and Subpart N as applicable, before use
in any test similar to those specified in
Standard 208, “Occupant Crash Protec-
tion” (49 CFR 571.208), and Standard
213, “Child Restraint Systems” (49 CFR
571.213).

[69 FR 42602, July 16, 2004, as amended at
70 FR 77338, Dec. 30, 2005; 75 FR 76646,
Dec. 9, 2010]

§ 572.163 Neck assembly and test pro-
cedure.

The neck assembly is assembled and
tested as specified in 49 CFR 572.123
(Subpart N).

§ 572.164 Thorax assembly and test
procedure.

(a) Thorax (upper torso) assembly. The
thorax consists of the part of the torso
assembly shown in drawing 167–2000 (in-
corporated by reference, see § 572.160).

(b) When the anterior surface of the
thorax of a completely assembled
dummy (drawing 167–2000) that is seat-
ed as shown in Figure S1 is impacted
by a test probe conforming to 49 CFR
572.127(a) at 6.71 ±0.12 m/s (22.0 ±0.4 ft/s)
according to the test procedure speci-
fied in 49 CFR 572.124(c):

(1) The maximum sternum displace-
ment relative to the spine, measured
with chest deflection transducer (speci-
fied in 49 CFR 572.124(b)(1)), must be
not less than 38.0 mm (1.50 in) and not
more than 46.0 mm (1.80 in). Within
this specified compression corridor, the
peak force, measured by the probe in
accordance with 49 CFR 572.127, must
be not less than 1205 N (270.9 lbf) and
not more than 1435 N (322.6 lbf). The
peak force after 12.5 mm (0.5 in) of ster-
num displacement, but before reaching
the minimum required 38.0 mm (1.46 in)
sternum displacement limit, must not
exceed an upper limit of 1500 N.

(2) The internal hysteresis of the
ribcage in each impact as determined
by the plot of force vs. deflection in
paragraph (b)(1) of this section must be
not less than 65 percent but not more
than 85 percent.

(c) Test procedure. The thorax assem-
by is tested as specified in 49 CFR
572.124(c).

§ 572.165 Upper and lower torso as-
semblies and torso flexion test pro-
cedure.

(a) Upper/lower torso assembly. The
test objective is to determine the stiff-
ness effects of the lumbar spine (speci-
fied in 49 CFR 572.125(a)), including
cable (specified in 49 CFR 572.125(a)),
mounting plate insert (specified in 49
CFR 572.125(a)), nylon shoulder bushing
(specified in 49 CFR 572.125(a)), nut
(specified in 49 CFR 572.125(a)), spine
box weighting plates (drawing 167–2020
Revision A), lumbar base weight (draw-
ing 167–3010 Revision A), and abdomi-
nal insert (specified in 49 CFR 572.125(a)),
on resistance to articulation between
the upper torso assembly (drawing 167–
2000) and the lower torso assembly
(drawing 167–3000). Drawing Nos. 167–
2000, 167–2020 Revision A, 167–3000,
and 167–3010 Revision A, are incorpo-
rated by reference, see § 572.160.

(b)(1) When the upper torso assembly
of a seated dummy is subjected to a
force continuously applied at the head
to neck pivot pin level through a rig-
idly attached adaptor bracket as shown
in Figure S2 according to the test pro-
cedure set out in 49 CFR 572.125(c), the
lumbar spine-abdomen assembly must
flex by an amount that permits the
upper torso assembly to translate in
angular motion until the machined
surface of the instrument cavity at the
back of the thoracic spine box is at 45
±0.5 degrees relative to the transverse
plane, at which time the force applied
as shown in Figure S2 must be within
88.6 N ±25 N (20.0 lbf ±5.6 lbf), and

(2) Upon removal of the force, the
torso assembly must return to within 9
degrees of its initial position.

(c) Test procedure. The upper and
lower torso assemblies are tested as
specified in 49 CFR 572.125(c), except
that in paragraph (c)(5) of that section,