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मसौदा संशोधन सं. 4
आई एस 15806 : 2018 कमबाईन हारवेस्टर – चुनिंदा कार्यकारीताएं एवं अन्य मापदण्ड के लिए अनुशंसाएं *(पहला पुनरीक्षण)*

Draft **AMMENDMENT NO. 4**
to
IS 15806 : 2018 COMBINE HARVESTER — RECOMMENDATIONS ON SELECTI PERFORMANCE CHARACTERISTICS (*First Revision*)

Agricultural Machinery and Equipment Sectional Committee, FAD 11	Last date for Comments: **25 October 2025**

(*Page* 1, *clause* **2**) — Substitute the following standards for the existing:

IS No.	*Title*
IS 5994 : 2022	Agricultural tractors — Test code (*fourth revision*)
IS 6024 : 2025	Guards for harvesting machines — Specification (*second revision*)
IS 6025 : 2024	Knife sections for harvesting machines — Specification (*second revision*)
IS 6283 (Part 1) : 2023/ ISO 3767-1 : 2016	Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Symbols for operator controls and other displays Part 1: Common symbols (*third revision*)
IS 8122(Part 1) : 1994	Test code for combine harvester-thresher Part 1 Terminology (*first revision*)
IS 8122 (Part 2) : 2000	Combine-harvester-thresher — Test code Part 2 : Performance test
IS 10378 : 2024	Knife back for harvesting machines — Specification (*first revision*)
IS 12239 (Part 1): 2018/ ISO 4254 – 1 : 2013	Guide for safety and comfort of operator of agricultural tractors and power tillers Part 1 General requirements (*second revision*)
IS 12239 (Part 2) : 1999	Tractors and machinery for agriculture and forestry — Technical means for ensuring safety Part 2 Tractors (*first revision*)

(*Page* 1, *clause* **3**) — Insert the following at the start:

'For the purpose of this standard, the following definitions in addition to those given in IS 8122 (Part 1) shall apply.'

(*Page* 4, *Table* 1) — Substitute the following table for the existing:

Table 1 Parameters Applicable for Qualifying Minimum Performance Criteria
(*Clause* 4)

Sl No.	**Characteristic**	**Category (Evaluative / Non-Evaluative)**	**Requirement**	**Tolerance**	**Remarks**
(1)	(2)	(3)	(4)	(5)	(6)
i)	**Prime Mover Performance**				
a)	Max. Power (absolute) Average max. power observed during 2h max. power test in natural ambient condition	Evaluative	To be declared by the manufacturer	Declared value to be achieved with a tolerance of ± 5 percent	–
b)	Max. power observed during test after adjusting the no load engine speed as per recommendation of the manufacturer for field work, kW	Evaluative	To be declared by the manufacturer	- do -	Not applicable for tractor operated combine harvester
c)	Power at rated engine speed, kW	Non-Evaluative	To be declared by the manufacturer	- do -	–
d)	Specific fuel consumption corresponding to average maximum power under 2h maximum power test, g/kWh.	Evaluative	-do-	+ 5 percent (max)	–
e)	Max. smoke density (Bosch no.) at 80% load between the speed at max. power & 55% of speed at max. or 1000 rpm whichever is higher	Evaluative	As per Central Motor Vehicles (CMV) Rules except for track type combine harvesters	NIL	–
f)	Max. crank shaft torque, (Nm)	Evaluative	To be declared by the manufacturer	± 8 percent	Not applicable for tractor operated

	observed during the test after no load engine speed is adjusted as per manufacturer's recommendation for field work				combine harvester
g)	Back up torque, %	Evaluative	7 %, (Minimum)	NIL	–
h)	Max. operating temperature, °C (i) Engine oil	Evaluative	To be declared by manufacturer	NIL	The observed value under high ambient condition should not exceed maximum safe value specified by the oil company which will be provided by the applicant.
	(ii) Coolant	Evaluative	To be declared by manufacturer	NIL	The declared value should not exceed the boiling temperature of coolant under the pressurized or otherwise and the observed value under high ambient condition should not exceed the declaration.
j)	Lubrication oil consumption, g/kWh	Evaluative	Not exceeding 1 percent of specific fuel consumption at maximum power under high ambient condition and under natural ambient condition for tractor operated combine harvester	NIL	The value would be based on the test conducted under high ambient condition and under natural ambient condition for tractor operated combine harvester
ii)	**Brake Performance at 20 km/h (Self-Propelled Combine Harvester) and 24 km/h (Tractor Operated Combine Harvester) or Maximum Speed whichever is less**				
a)	Max. stopping distance at a force equal to or less than 600 N on brake pedal (m) – (Cold brake and Hot brake)	Evaluative	As per requirements of CMVR except for track type combine harvesters	NIL	–
b)	Max. force exerted on brake pedal to achieve a deceleration of 2.5 m/sec^2.	Evaluative	≤ 600N	NIL	Not applicable for track type combine harvester

c)	Effectiveness of Parking brake at a force of 600 N at foot pedal or 400 N at hand lever	Evaluative	As per requirements of CMVR except for track type combine harvesters	NIL	Based on the test conducted, Yes/No, as the case may be, should be indicated
iii)	**Mechanical Vibration (Amplitude of Vibration) at**				
a)	Operator's platform	Non-Evaluative	120 μm max.		–
b)	Steering wheel	Non-Evaluative	150 μm max.		–
c)	Seat with driver seated	Non-Evaluative	120 μm max.		–
iv)	**Air Cleaner Oil Pull Over**				
	Max. oil pull over in percentage when tested in accordance with IS 8122 (Part 2).	Evaluative	0.20% max.	NIL	–
v)	**Noise Measurement**				
a)	Max. ambient noise emitted by combine at bystanders position dB (A)	Evaluative	As per CMV Rules except for track type combine harvesters	NIL	As per road transport condition for wheel type combine harvester and on earthen track/loose soil surface for track type combine
b)	Max. noise at operator's ear level dB (A)	Evaluative	As per CMV Rules except for track type combine harvesters	NIL	In stationary condition on short grass/soil surface with all assemblies/sub-assemblies in working condition (without passing crop through machine)
vi)	**Header Lifting Test**				
	Satisfactory completion of header lifting test	Evaluative	–	NIL	–
vii)	**Field Performance**				
a)	Suitability for crops	Evaluative	Wheat & paddy (wheel type), Paddy (Track type)	NIL	–
b)	Average processing losses	Evaluative			
			≤ 3 percent for wheat	NIL	–
			≤ 4 percent for barley	NIL	–
			≤ 4 percent for rice	NIL	–
			≤ 3 percent for sorghum	NIL	–
			≤ 5 percent for maize	NIL	–
			≤ 4 percent for oilseed rape	NIL	–
			≤ 5 percent for soybean	NIL	–
c)	Threshing	Evaluative	≥ 98 percent for wheat and	NIL	–

	efficiency		paddy		
d)	Cleaning efficiency	Evaluative	≥ 96 percent for wheat and paddy	NIL	–
e)	Grain breakage in main grain tank	Evaluative	≤ 2.5 percent	NIL	–
f)	Non collectable losses	Evaluative	≤ 2.5 percent for wheat, paddy and gram ≤ 4 percent for soybean	NIL	–
viii)	**Field Performance for Straw Management System (if fitted):**				
a)	Uniformity of straw spread, CV (%)	Evaluative	20, *Max*	–	–
b)	Weighted mean size of chopped straw, cm	-do-	20, *Max*	–	–
ix)	**Safety Requirement**				
a)	Guards against all moving parts/drives and hot parts	Evaluative	Belt and chain drives, pulleys, hydraulic pipes (Around operators' workplace)	–	As per IS 12239 (Part 2)
b)	Lighting arrangement	Evaluative	Essential as per CMVR, except for track type combine	–	–
c)	Grain tank cover	Evaluative	Essential	–	–
d)	Spark arrester in engine's exhaust in case naturally aspirated engine	Evaluative	Essential	–	–
e)	Stone trap before concave bars	Evaluative	Essential	–	–
f)	Rear view mirror	Evaluative	Essential	–	–
g)	Fire extinguisher	Evaluative	Essential	–	–
h)	Slip clutch at following drives – 1) Cutting platform 2) Under shot conveyor drive 3) Grain & tailing elevator	 Evaluative Non-Evaluative Non-Evaluative	 Essential Optional Optional	–	–
j)	Anti-slip surfaces at operator platform & ladder & proper gripping for the control levers	Evaluative	Essential	–	As per IS 12239 (Part 1)
k)	Working clearance	Evaluative	–	–	As per IS 12239

	around the controls				(Part 1)
m)	Labelling of control gauges and all operating controls	Evaluative	Essential	–	As per IS 6283 (Part 2)
x)	Material of construction: Guards, knife blades and knife back	Non-Evaluative	Conforming to IS 6024, IS 6025 and IS 10378 respectively	–	–
xi)	Material of blades for Straw Management System (SMS):	Non-Evaluative	The flail and fixed blades shall be manufactured from steel having the following chemical composition or such other composition as shall be agreed to between the supplier and the purchaser: a) Carbon 0.70 to 0.1 percent, b) Manganese 0.6 to 0.97 percent, c) Chrome 0.1 percent, d) Nickel 0.1 percent	–	--
xii)	Bushes for flail blades	-do-	Mild steel	–	–
xiii)	Hardness of flail blades for Straw Management System (SMS):	Non-Evaluative	Bush section: 20 to 35 HRC Edge section (Hardened zone) : 48 to 58 HRC Remainder zone: 20 to 35 HRC	–	–
xiv)	Hardness of serrated blades for Straw Management System (SMS):	Non-Evaluative	Bush section: 20 to 35 HRC Edge section (Hardened zone) : 48 to 58 HRC Remainder zone: 20 to 35 HRC	–	–
xv)	**Safety Requirements for Straw Management System, (if fitted):**				
a)	Guards against all moving parts/drives and hot parts	Evaluative	Essential	–	–
b)	RPM indicator for rotor	Evaluative	Desirable	–	–
c)	Overlapping of flail and fixed serrated blades	Evaluative	Essential		The clearance of the flail and fixed serrated blades should be adjustable