

## **Standard GOST 26653-2015 – the new requirements regarding the cargo preparing for transportation**

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On the 1<sup>st</sup> July, 2017, the new interstate standard GOST 26653-2015 “Preparing general cargoes for transportation. General requirements” was forced into application by the Interstate Council for Standardization, Metrology and Certification (protocol No. 80-П dd. 29.09.2015). Armenia, Belarus, Kazakhstan, Kirgizia, Russia and Tajikistan voted affirmatively. In Russia the standard came into effect in March, 2017.



Supply contracts often contain an article of the following effect: “The cargo packaging should provide full protection against damages of any kind or corrosion in regard of prolonged transportation and storage in a motor vehicle”. The article included also the reference to the standard GOST 26653-90 “Preparing general cargoes for transportation. General requirements”. The concerned standard, issued back in 1990, provided a quick view into the meaning and subject of cargo preparing for transportation, however, due to the “remoteness”, it gives the opportunity to exploit some of its provisions. A huge disadvantage of the standard was the absence of information regarding the forces effecting the cargo in the course of transportation by various means of transport.

And thus, intra muros of the Central Marine Research and Design Institute (CNIIMF, Russia) the GOST 26653-2015, providing general requirements to the preparing general cargo for transportation in direct and intermodal transport (road, air, railway, marine and/or river).

The standard presents the field of application, normative references, terms and definitions, requirements to cargo, transport tare, etc. There also three annexes: A (obligatory) – normative dynamic loads, subjected to registration at a relevant means of transport: B (recommended) – information about cargo (recommended form); C (referential) – technical characteristics of materials with high friction ratios.

Let’s have a quick view into the new standard, and compare it to the previous version.

According to the 1990 version, the requirements should be taken into consideration while concluding an export or import supply contracts. The 2015-standard concerns both international and intrastate transportations, without exceptions.

The key aspect of the new GOST is the introduction of the section “Terms and definitions”, which allows avoiding misinterpretation.



Let's take a look at a few terms:

3.1. General cargoes: “Various breakbulk cargoes: metal products, mobile machinery (self-propelled and towed vehicles, wheeled movers or crawlers), heavy-load and oversize cargoes, ferroconcrete items and structures, other building cargoes, unitized cargoes, including tared dangerous goods, unit loads, flexible containers (big-bags), timber cargoes, cargo transport units, including containers”.

3.2. Cargo freight: “Transportation of a cargo including an obligatory conclusion of a freight contract, set for the concerned means of transport”.

And if previously “freight” and “transportation” were divided into two processes, with the difference concerning the presence or absence of freight contract, the new standard states that transportation comes as freight, thus coming under the effect of GOST 26653-2015.

Some terms are given with English translation, which simplifies the correct understanding.

3.6. Packaging: “Means or complex of means, providing the protection of product and its tare in the course of handling. Handling includes transportation, storage and selling of product”.

3.7. Transport packaging: “Item, intended to protect the tare and product in the course of storing and transportation, constituting an independent cargo unit”.

3.8. Cargo unit: “The cargo prepared for implementing (un-) loading, transportation and storage”.

3.9. Overpack (unit load): “Aggregative cargo unit, consisting of several cargo units with the application of means of palletizing, and prepared for (un-) loading, transportation and storage”.

3.10. Cargo transport unit (CTU): “Freight container, motor vehicle, railway carriage, contrailer, demountable body or other similar unit, utilized, in particular, for multimodal transportation”.

3.14. Packing: “Stowing and securing cargo in a CTU”.

3.15. Unpacking: “Releasing a CTU of cargo and means of securing”.

3.16. Packer: “A party responsible for loading, stowing, and securing of cargo in a CTU; Packer can be hired either by consignor, or by shipper, forwarder, carrier; if consignor or shipper perform loading at their premises, consignor or shipper are considered packers”.

Every term and their translation are taken from other normative documents, references attached. Interesting, that the terms “packing” (3.16) and “packaging” (3.6) are being now distinguished, despite the fact that the Russian version of CMR-convention translates “packaging” as “packing”.



The general provisions of the GOST 26653-2015 has also been altered:

4.1. The cargo should be prepared for transportation in accordance with the present standard and the requirements of the standards, technical conditions, operational documentation for product, rules of cargo transportation for respective means of transport, and the International rail-way freight traffic (SMGS).

4.2. The cargo preparing should ensure:

- The safety of cargo and motor vehicles along the full course of transportation; safety of the environment, fulfilling the requirements regarding loading and securing of cargoes, applicable at certain means of transport;
- Maximum utilization of capacity and loading space of vehicles and loading/unloading machinery under the condition of obligatory ensuring cargo safety and the transportation security;
- Necessary strength of the cargo packaging for stacking and re-loading operations, normative dynamic loads, registration at a relevant means of transport in accordance to annex A;
- Sufficient, in accordance to standards, technical conditions and operational documents for product, cargo securing in a cargo transport unit;
- The convenience of cargo operations, stowing and securing on vehicles and at warehouses.

4.3. The following factors should be considered while preparing cargo for transportation:

- Transport characteristics and properties of cargo, geographic region, terms of delivery and season;
- Continuance of hydrometeorological factors, including microclimatic regions conditions;
- Capacity and dimensions of covered and open loading facilities, sections, compartments, vehicle platforms: vessels, wagons, trailers, airplanes, etc.
- Necessity to secure cargoes constituting increased danger of shifting (p. B.3, annex B), considering the application of high friction ratio materials from the annex C;
- Necessity to provide certain temperature, humidity or ventilation conditions inside vehicles' loading compartments;
- Possibility to apply mechanical means of implementing re-loading procedures;
- Risk of damaging cargoes and vehicles, people's injury in the course of re-loading procedures due to insufficient or improper awareness of transport organizations regarding cargo properties and safe ways of reloading, stowing and securing in/on means of transport;
- Necessity of preliminary informing transport companies regarding the kind of cargo

presenting for transportation and its alteration with the purpose of estimation or clarification of freight and handling technology at the reloading points. The form of information presenting, applicable in marine transport, is presented in annex B and recommended for use on other means of transport;

- Possibility to aggregate cargo units.

4.6. Transport tare and packaging should ensure its security and safety in the course of cargo handling operations with the use of load gripping mechanisms.

The Shipper's liability has been extended. According to GOST 26653-90: "1.11. Shipper incurs liability for the consequences of insufficient tare and internal packaging (breakage, deformation, leakage, etc.), and for using tare and packing improper for cargo properties, weight or the existing standards. GOST 26653-2015: "4.1. Shipper incurs liability for the consequences of providing unreliable information of the cargo and its properties, marking, tare and internal packaging (breakage, deformation, leakage, etc.) insufficiency, and for using tare and packing improper for cargo properties, weight or the existing standards, technical conditions, operational documentation for certain types of products, resulting in arising of circumstances affecting the safety of transportation and security of transported cargo".

The chapter 5 of the new standard contains the requirements imposed on the cargo with the emphasis on the following groups of general cargoes: metal products; mobile machinery; heavy-load and oversize cargoes; ferroconcrete items and structures; unitized cargoes; unit loads; cargoes in medium and large-capacity containers, tared dangerous goods.

The requirements to each group are rather interesting. Thus, there is a project of heavy-load and oversize cargoes transportation reglament.

5.3.9. The project of heavy-load and oversize cargoes transportation includes the choice of means of transport, schemes and calculations of the cargo stowing and securing, the calculations of the transport rigidity and stability, calculations and documentation regarding their refitting; reloading technology; measures of preparing loading-unloading facilities; enforcing and development of road component, including engineering structures.

5.3.10. Cargoes are accepted for transportation after the transportation and securing project coordination with carrier. If required, the transportation project is coordinated with shipper, consignee, cargo terminals, and other transport and construction companies, involved in delivery and mounting of the cargo at the premises of consignee.

Chapter 6 defines the requirements imposed on transport tare. Let's emphasize the following articles:

6.2.2. Securing of a tare with cargo inside transport packaging (horizontal component) should withstand the load  $F$ , in newtons (N), in accordance to the formula  $F = 0.8 * Q * g$ , where 0.8 – horizontal acceleration capacity;  $Q$  – net weight of cargo;  $g$  – acceleration of gravity ( $9.81 \text{ m/s}^2$ ).

6.2.3. The means of cargo fastening inside unit loads should ensure safety of cargo under the effect of maximum dynamic loads, acting at involved in the process of transportation means of transport in accordance to the annex A.

6.3. Cargoes in transport tare, weighing over 1 t, machines, equipment, joints and details, presented for transportation unpackaged or with partial protection, for the convenience of loading procedures and possibility to be secured at a means of transport, should be sufficiently equipment (with loops,

claps, eyebolts, hooks, lifting eyes, slinging holes), or have points for attaching slings and flexible securing elements or inserting loaders' forks. These points and facilities should be marked and specified in accompanying documents.

The most important supplement of the GOST 26653-2015 is the implementation of annex A (obligatory) "Normative dynamic loads, registered at a certain means of transport", duplicates the provisions of IMO/ILO/UNECE Code of Practice for Packing of Cargo Transport Units (CTU Code).

The accelerations (a), subjected to registration during transport, include the acceleration of gravity ( $g = 9.81 \text{ m/s}^2$ ) and accelerations, caused by typical transport conditions, such as emergency braking or sharp change of a driving lane, or moving of a vessel through a rough sea. The concerned accelerations are expressed as the composition of acceleration of gravity (g) and dynamic ratio ( $k_d$ ) in the course of transportation:  $a = k_d * g$ .

Road transport				
Securing in	Acceleration coefficients			
	Longitudinally ( $c_x$ )		Transversely ( $c_y$ )	Minimum vertically down ( $c_z$ )
	forward	rearward		
Longitudinal direction	0.8	0.5	-	1.0
Transverse direction	-	-	0.5	1.0

Tare rigidity should conform to the same conditions.

It is worth pointing out that extreme braking refers to typical transport conditions and should be taken in consideration while cargo packaging, packing, stowing and securing.

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The requirement of the new standard GOST26635-2015 should be concerned:

- When developing standards, technical conditions, operational documentation for products, prepared for transportation with regard to packaging, marking, transportation and storage.
- When planning and organizing dispatch of cargoes, concluding supply contracts and treaties;
- When exercising state control over executing shipper's liability regarding preparing general cargoes for transportation, including informing carrier of hazardous cargoes properties, requiring undertaking special measures of precaution.

Carrier has the right to expect that the cargo presented for transportation would be prepared in sufficient manner, ensuring secure delivery. However, in many cases shippers do not realize the perils arising on the way, and only carrier, being no stranger to the process of transportation, can point at the necessary measures of packing and securing.

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