

Glass products standardization progress in CIS

Alexander G. Chesnokov,

Olga A. Emelianova,

Elena A. Chermkhina,

Glass Research Institute, Moscow, Russia

Keywords

1 = standard, 2 = technical regulation, 3 = GOST, 4 = Technical Committee 41

Abstract

From GPD-2013 all discussed there 32 International standards of CIS were approved and forced into action. During 2014 we developed 26 International standards of CIS on the basis of the National standards of Russia developed earlier. Development of the 5 new standards had started. For the speeding up of the CIS International standards development, we are carrying out organization efforts for the establishment of Interstate technical committee "Glass" on the base of Russian TC 41 "Glass". Standards harmonization work between CIS and CEN has considerably improved after signing of the interaction agreement between RosStandard and CEN.

Introduction

Today countries of the Eurasian Customs Union (EACU) – especially Belarus, Kazakhstan, and Russia – as well as other countries of the Eurasian Economic Community (EAEC or EurAsEC) including Armenia and Kyrgyzstan support active processes of development, approval and enforcement of Technical regulations. Technical regulations are the norms, which establish common mandatory requirements for product safety in these countries. Evidence base to confirm the conformity of production requirements should include interstate standards of CIS. Therefore, development and updating of the interstate standards takes great attention. The trade turnover between EACU countries grows at 20-30 % rate per year, so the timing of development and approval of common standards are very brief.

The Main text

By now, our Technical Committee 41 was able to withstand the deadlines for the development, approval and enforcement of standards. The fact that all Interstate Standards designed by TC 41 in 2012-2013, which we presented on GPD 2013, are approved and put into effect in Russia on 1 January 2015, is the good evidence of that. These 32 approved standards listed in Table 1. Strictly speaking, TC 41 is the Technical Committee of Russian Federation. However, the specialists of other CIS countries take part in our work, as they have to work according to these standards too.

Table 1. Interstate Standards approved in 2013

Standard number	Russian Title	English Title	Harmonization	Replaced standard
ГОСТ (GOST) 7481-2013	Стекло армированное. Технические условия	Wired glass. Specifications	EN 572-3:2012 EN 572-6:2012 EN 572-8:2012	ГОСТ (GOST) 7481–78
ГОСТ (GOST) 32530-2013	Стекло и изделия из него. Маркировка, упаковка, транспортирование, хранение	Glass and glass products. Marking, packing, transportation, storage		
ГОСТ (GOST) 32357-2013	Стекло и изделия из него. Метод испытания кипячением (температуростойкость)	Glass and glass products. Test method boiling (temperature resistance)	ISO 12543-4:2011	
ГОСТ (GOST) 32564.1-2013 (ISO 16936-1:2005)	Стекло и изделия из него. Метод испытания на стойкость к удару шаром	Glass and glass products. Test method for resistance to ball drop	ISO 16936-1:2005	

Standard number	Russian Title	English Title	Harmonization	Replaced standard
ГОСТ (GOST) 32564.2-2013 (ISO 16936-2:2005)	Стекло и изделия из него. Метод испытания на стойкость к удару топором и молотком	Glass and glass products. Test method for resistance to impact of hammer and axe	ISO 16936-2:2005	
ГОСТ (GOST) ISO 9385:2013	Стекло и изделия из него. Метод определения твердости	Glass and glass products. Hardness determination method	ISO 9385: 1990	
ГОСТ (GOST) 25535–2013	Стекло и изделия из него. Методы определения термостойкости	Glass and glass products. Heat resistance determination methods		ГОСТ (GOST) 25535–82
ГОСТ (GOST) 32557-2013	Стекло и изделия из него. Методы контроля геометрических параметров и показателей внешнего вида	Glass and glass products. Inspection methods for geometric parameters and appearance		
ГОСТ (GOST) 9900-2013	Стекло и изделия из него. Методы определения механических свойств. Определение модуля упругости при поперечном статическом изгибе	Glass and glass products. Methods for determination of mechanical properties. Determination of elasticity modulus at cross static bending		ГОСТ (GOST) 9900–85
ГОСТ (GOST) 32280-2013	Стекло и изделия из него. Методы определения механических свойств. Определение стойкости к статической нагрузке	Glass and glass products. Methods for determination of mechanical properties. Determination of resistance to static load		
ГОСТ (GOST) 11067-2013	Стекло и изделия из него. Методы определения механических свойств. Определение ударной вязкости	Glass and glass products. Method for determination of mechanical properties. Determination of impact toughness		ГОСТ (GOST) 11067–85
ГОСТ (GOST) 32540-2013	Стекло и изделия из него. Методы определения оптических характеристик. Определение показателя преломления	Glass and glass products. Methods for determining the optical characteristics. Determination of the refractive index		
ГОСТ (GOST) 32278-2013	Стекло и изделия из него. Методы определения оптических характеристик.	Glass and glass products. Optical characteristics		

Standard number	Russian Title	English Title	Harmonization	Replaced standard
	Определение цветовых координат	determination methods. Determination of colour coordinates		
ГОСТ (GOST) 32281.1-2013 (EN 1288-1:2000)	Стекло и изделия из него. Определение прочности на изгиб. Основные принципы проведения испытаний	Glass in building – Determination of the bending strength of glass – Part 1: Fundamentals of testing glass	EN 1288-1:2000	
ГОСТ (GOST) 32281.2-2013 (EN 1288-2:2000)	Стекло и изделия из него. Определение прочности на изгиб. Испытание двойным соосным кольцом на плоских образцах с большими площадями испытываемых поверхностей	Glass and glass products. Determination of the bending strength. Coaxial double ring test on flat specimens with large test surface areas	EN 1288-2:2000	
ГОСТ (GOST) 32281.3-2013 (EN 1288-3:2000)	Стекло и изделия из него. Определение прочности на изгиб. Испытание на образце, опирающемся на две точки (четыре точки изгиба)	Glass and glass products. Determination of the bending strength. Test with specimen supported at two points (four point bending)	EN 1288-3:2000	
ГОСТ (GOST) 32281.5-2013 (EN 1288-5:2000)	Стекло и изделия из него. Определение прочности на изгиб. Испытание двойным соосным кольцом на плоских образцах с небольшими площадями испытываемых поверхностей	Glass and glass products. Determination of the bending strength. Coaxial double ring test on flat specimens with small test surface areas	EN 1288-5:2000	
ГОСТ (GOST) 32361-2013	Стекло и изделия из него. Пороки. Термины и определения	Glass and glass products. Visual faults. Terms and definitions		
ГОСТ (GOST) 32298-2013 (EN 12603:2002)	Стекло и изделия из него. Порядок определения критерия согласия и доверительных интервалов по распределению Вейбулла для значений прочности стекла	Glass and glass products. Procedures for goodness of fit and confidence intervals for Weibull distributed glass strength data	EN 12603:2002	
ГОСТ (GOST) 32529-2013	Стекло и изделия из него. Правила приемки	Glass and glass products. Acceptance rules		
ГОСТ (GOST) 32539-2013	Стекло и изделия из него. Термины и определения	Glass and glass products. Terms and definitions		

Standard number	Russian Title	English Title	Harmonization	Replaced standard
ГОСТ (GOST) EN 13541-2013	Стекло и изделия из него. Метод испытания на стойкость к воздействию взрыва	Glass and glass products. Explosion resistance test method	EN 13541:2012	
ГОСТ (GOST) 32566-2013	Стекло и изделия из него. Метод испытания на пулестойкость	Glass and glass products. Test method of bullet resistance		
ГОСТ (GOST) 32360-2013	Стекло матированное. Технические условия	Matt glass. Specifications		
ГОСТ (GOST) 32362-2013	Стекло неорганическое и стеклокристаллические материалы. Определение химического состава. Общие требования к методам определения содержания основных химических компонентов	Inorganic glass and glass-crystalline materials. Determination of chemical composition. General requirements for methods of determining the content of major chemical components		
ГОСТ (GOST) 32559-2013	Стекло с лакокрасочным покрытием. Технические условия	Painted glass. Specifications		
ГОСТ (GOST) 32562.1-2013 (EN 1096-1:2012)	Стекло с покрытием. Классификация	Coated glass. Classification	EN 1096-1:2012	
ГОСТ (GOST) 32562.2-2013 (EN 1096-2:2012)	Стекло с покрытием. Методы испытаний для покрытий классов А, В и S	Coated glass. Test methods for class A, B, S coatings	EN 1096-2:2012	
ГОСТ (GOST) 32562.3-2013 (EN 1096-3:2012)	Стекло с покрытием. Методы испытаний для покрытий классов С и D	Coated glass. Test methods for class C and D coatings	EN 1096-3:2012	
ГОСТ (GOST) 32562.4-2013 (EN 1096-4:2004)	Стекло с покрытием. Правила приемки	Coated glass. Acceptance rules	EN 1096-4:2004	
ГОСТ (GOST) 32563-2013	Стекло с полимерными пленками. Технические условия	Adhesive backed polymeric filmed glass. Specifications	prEN 15755-1:2008	
ГОСТ (GOST) 5533–2013	Стекло узорчатое. Технические условия	Patterned glass. Specifications	EN 572-5:2012 EN 572-8:2012	ГОСТ (GOST) 5533–86

During 2013-2014, there were developed and approved 30 new Interstate Standards of CIS, which have to replace national standards of countries and some obsolete standards of USSR and CIS. These standards will be enforced from April 1, 2016 and listed in Table 2.

Table 2. Standards enforced from April 01, 2016

Standard number	English Title	Harmonization	Replaced standard	Repealed standard
ГОСТ (GOST) 17716–2014	Mirrors. General specifications	EN 1036-1:2007	ГОСТ (GOST) 17716–91	ГОСТ Р (GOST R) 54161–2010

Standard number	English Title	Harmonization	Replaced standard	Repealed standard
ГОСТ (GOST) 30698–2014	Tempered glass. Specifications	EN 12150-1:2000, EN 12150-2:2004	ГОСТ (GOST) 30698–2000	ГОСТ Р (GOST R) 54162–2010
ГОСТ (GOST) ISO 14438–2014	Glass and glass products. Determination of energy balance value. Calculation method	ISO 14438:2002		ГОСТ Р (GOST R) 54167–2010 (ИСО 14438:2002)
ГОСТ (GOST) 32996–2014	Glass and glass products. Test methods for resistance to climatic exposure. Frost resistance test method			ГОСТ Р (GOST R) 54163–2010
ГОСТ (GOST) EN 410–2014	Glass and glass products. Optical characteristics determination methods. Determination of luminous and solar characteristics	EN 410:2011		ГОСТ Р (GOST R) 54164–2010 (ИСО 9050:2003)
ГОСТ (GOST) EN 675–2014	Glass and glass products. Thermal properties determination methods. Thermal resistance determination method	EN 675:2011		ГОСТ Р (GOST R) 54165–2010 (ИСО 10293:1997)
ГОСТ (GOST) 24866–2014	Sealed insulating glass units. Specifications	EN 1279-1:2004, EN 1279-2:2002, EN 1279-3:2002, EN 1279-4:2002, EN 1279-6:2002	ГОСТ (GOST) 24866–99	ГОСТ Р (GOST R) 54175–2010
ГОСТ (GOST) EN 12898–2014	Glass and glass products. Thermal properties determination methods. Determination of the emissivity	EN 12898:2001		ГОСТ Р (GOST R) 54168–2010
ГОСТ (GOST) 111–2014	Clear flat glass. Specifications	EN 572-8:2012	ГОСТ (GOST) 111–2001	ГОСТ Р (GOST R) 54170–2010
ГОСТ (GOST) 32997–2014	Tinted flat glass. General specifications	EN 572-8:2012		ГОСТ Р (GOST R) 54169–2010

Standard number	English Title	Harmonization	Replaced standard	Repealed standard
ГОСТ (GOST) ISO 16932–2014	Glass and glass products. Destructive-windstorm-resistant security glazing. Method of testing and classification	ISO 16932:2007		ГОСТ Р (GOST R) ИСО 16932–2011
ГОСТ (GOST) 33088–2014	Glass and glass products. Test method for resistance to humidity			ГОСТ Р (GOST R) 54181–2010
ГОСТ (GOST) 33000–2014	Glass and glass products. Test method for resistance to fire resistance	ISO 834–1:1999, EN 1363–1:2012, EN 1363–2:1999, EN 13501–2:2007		ГОСТ Р (GOST R) 54495–2011
ГОСТ (GOST) 32999–2014	Glass and glass products. Salt spray test method			ГОСТ Р (GOST R) 54182–2010
ГОСТ (GOST) 33089–2014	Glass and glass products. Test method for resistance to UV-radiation			ГОСТ Р (GOST R) 54183–2010
ГОСТ (GOST) 10978–2014	Glass and glass products. Method for determination of temperature coefficient of linear expansion		ГОСТ (GOST) 10978–83	—
ГОСТ (GOST) 33001–2014	Glass and glass products. Methods for determination of mechanical properties. Test for abrasion resistance			—
ГОСТ (GOST) 33002–2014	Glass and glass products. Methods for determination of mechanical properties. Tests for breakage pattern			—
ГОСТ (GOST) 33003–2014	Glass and glass products. Methods for determination of optical distortions			—

Standard number	English Title	Harmonization	Replaced standard	Repealed standard
ГОСТ (GOST) 33004–2014	Glass and glass products. Properties. Terms and definitions			—
ГОСТ (GOST) 33090–2014 (ISO 16940:2008)	Glass and glass products. Method for determination of soundproof ability	ISO 16940:2008		ГОСТ Р (GOST R) 54327–2011 (ИСО 16940:2008)
ГОСТ (GOST) 30826–2014	Laminated glass. Specifications	ISO 12543-5:2011, ISO 12543-6:2011	ГОСТ (GOST) 30826–2001	ГОСТ Р (GOST R) 54171–2010; ГОСТ Р (GOST R) 51136–2008
ГОСТ (GOST) 30779–2014	Insulating glass units. Method of determination of life circle	EN 1279-2:2002	Взамен ГОСТ (GOST) 30779–2001	ГОСТ Р (GOST R) 54172–2010
ГОСТ (GOST) 32998.4–2014 (EN 1279-4:2002)	Insulating glass units. Methods of test for the physical attributes of edge seals	EN 1279-4:2002		ГОСТ Р (GOST R) 54173–2010 (EH 1279-4:2002)
ГОСТ (GOST) 32998.6–2014 (EN 1279-6:2002)	Insulating glass units. Methods and rules of products quality assurance	EN 1279-6:2002		ГОСТ Р (GOST R) 54174–2010 (EH 1279-6:2002)
ГОСТ (GOST) 31364–2014	Soft coating low emissivity glass. Specifications	EN 1096-1:2012 EN 1096-3:2012 EN 1096-4:2004	Взамен ГОСТ (GOST) 31364–2007	ГОСТ Р (GOST R) 54176–2010
ГОСТ (GOST) 30733–2014	Hard coating low emissivity glass. Specifications	EN 1096-1:2012 EN 1096-2:2012 EN 1096-4:2004	Взамен ГОСТ (GOST) 30733–2000	ГОСТ Р (GOST R) 54177–2010
ГОСТ (GOST) 33086–2014	Soft coating solar protection or decorative glass. Specifications	EN 1096-1:2012 EN 1096-3:2012 EN 1096-4:2004		ГОСТ Р (GOST R) 54178–2010
ГОСТ (GOST) 33017–2014	Hard coating solar protection or decorative glass. Specifications	EN 1096-1:2012 EN 1096-2:2012 EN 1096-4:2004		ГОСТ Р (GOST R) 54179–2010
ГОСТ (GOST) 33087–2014	Heat strengthened glass. Specifications	EN 1863-1:2011 EN 1863-2:2004		ГОСТ Р (GOST R) 54180–2010

In the last two years, we finished development of 10 Interstate Standards of CIS, listed in Table 3. In June 2015, they will be transferred for approval to Euro-Asian Council for Standardization, Metrology and Certification (EASC). There are plans that they will be approved in 2016 and take effect in 2017.

Table 3. New Interstate Standard of CIS projects developed in 2014-2015

#	English Title	Harmonization
1	Heat soaked thermally toughened glass. Specifications	EN 14179-1:2005, IDT
2	Heat soaked thermally toughened glass. Evaluation of conformity	EN 14179-2:2005, IDT
3	Thermally toughened alkaline earth silicate glass. Technical requirements	EN 14321-1:2005, IDT
4	Thermally toughened alkaline earth silicate glass. Evaluation of conformity	EN 14321-2:2005, IDT
5	Glass and glass products. Test method for resistance to impact dual-tyres	EN 12600:2002, IDT
6	Glass and glass products. Test method for resistance to soft body	—
7	Glass and glass products. Sound insulation values	EN 12758:2011, IDT
8	Glass and glass products. Glass handling safety requirements	—
9	Glass and glass products. Application guidelines	—
10	Self-cleaning coated glass. Specifications	—

In 2015, TC 41 started development of several Interstate Standards of CIS, listed in Table 4. Discussion of these projects will start in the end of the year. We plan to finish development of the projects in 2016.

Table 4. The Interstate Standard of CIS projects started in 2015

#	English Title	Harmonization
1	Thermally toughened safety glass panes for windows and side scuttles. Specifications	ISO 21005:2012
2	Enamelled thermally toughened glass. Specifications	—
3	Glass and glass products. Determination of thermal transmittance (U value). Calculation method	EN 673:2011
4	Glass and glass products. Determination of thermal transmittance (U value). Guarded hot plate method	EN 674:2011
5	Curved glass. Terms and definitions	ISO 11485-1:2011
6	Curved glass. Technical requirements	ISO 11485-2:2011
7	Curved glass. Requirements for curved tempered and curved laminated safety glass	ISO 11485-3:2014
8	Glasses for liquid level indicators. Specifications	Supersedes GOST 1663–81
9	Borosilicate glass. Technical requirements	EN 1748-1-1:2004
10	Glass ceramics. Technical requirements	EN 1748-2-1:2004
11	Soda lime silicate glass. Technical requirements	EN 572-1:2012
12	Alkaline earth silicate glass. Technical requirements	EN 14178-1:2004

Conclusion

We want to note that harmonization level between CIS Interstate Standards and ISO and CEN standards is growing. Development of identical standards increases. At the same time, new standards are developing that are required for successful cooperation between consumers and producers of glass in the CIS countries.

Currently we draw up plans for the standardization of glass products for the years 2016-18, but this can be topic at the following conferences.

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2015 a.