® TECHNICKÝ A ZKUŠEBNÍ ÚSTAV STAVEBNÍ PRAHA, s.p.
Technical and Test Institute for Construction Prague
Akreditovaná zkušební laboratoř, Autorizovaná osoba, Notifikovaná osoba, Oznámený subjekt, Subjekt pro technické posuzování, Certifikační orgán, Inspekční orgán / Accredited Testing Laboratory, Authorized Body, Notified Body, Technical Assessment Body, Certification Body, Inspection Body. Prosecká 811/76a, 190 00 Praha 9 - Prosek, Czech Republic

Notified Body 1020

CERTIFICATE OF CONSTANCY OF PERFORMANCE

No. 1020 – CPR – 090-031654

In compliance with Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011 (the Construction Products Regulation or CPR), this certificate applies to the construction product:

Product

ROAD RESTRAINT SYSTEM

variant : safety barrier of steel, one-sided

type : OG-CE-N2

Level of restraint	**N2**
Impact intensity	**B**
Normalised working width	**W3**
Normalised vehicle intrusion	**NPD**
Snow removal	**NPD**

produced by or for

3S LAND

Identification No.: 127-81-30638

Address: 68, Maebong-gil, Naechon-myeon, Pochen-si, Gyeonggi-do, Korea

and produced in the manufacturing plant(s):

3S LAND

Identification No.: 127-81-30638

Address: 697-11, Hyangyang-ri, Paju-eup, Paju-si, Gyeonggi-do, Korea

This certificate attests that all provisions concerning the assessment and verification of constancy of performance and the performances described in Annex ZA of the standard

EN 1317-5:2007+A2:2012/AC:2012

under system 1 are applied and that

the product fulfils all the prescribed requirements set out above.

This certificate was first issued on 25 April 2014 and will remain valid as long as the test methods and/or factory production control requirements included in the harmonised standard, used to assess the performance of the declared characteristics, do not change, and the product, and the manufacturing conditions in the plant are not modified significantly.

The stamp of the Notified Body 1020

Prague, 25 April 2014

TECHNICKÝ A ZKUŠEBNÍ ÚSTAV STAVEBNÍ PRAHA, s.p. OZNÁMENÝ SUBJEKT 1020 ÚNMZ 09

Ing. Jozef Pôbiš
Manager of the Notified Body

TECHNICKÝ A ZKUŠEBNÍ ÚSTAV STAVEBNÍ PRAHA, s.p.
Technical and Test Institute for Construction Prague
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Notified Body 1020
Branch 0900 – Technical Engineering Services

REPORT

on the outcome of the assessment and verification of constancy of performance of the product

according to the Regulation (EU) 305/2011 of the European Parliament and of the Council of 9 March 2011 (the Construction Products Regulation or CPR), Art. 1.2 of the Annex V

No. 090-031653

Trade name:

ROAD RESTRAINT SYSTEM
variant : safety barrier of steel, one-sided
type : OG-CE-N2

Producer:

3S LAND

Identification No.:	127-81-30638
Address:	68, Maebong-gil, Naechon-myeon, Pochen-si, Gyeonggi-do, Korea
Producer:	3S LAND
Address:	68, Maebong-gil, Naechon-myeon, Pochen-si, Gyeonggi-do, Korea
Production plant:	3S LAND
Address:	697-11, Hyangyang-ri, Paju-eup, Paju-si, Gyeonggi-do, Korea
Order:	Z090130605

Number of report pages including tittle-page: 5 Number of Annexes: 0

Stamp of the Notified Body 1020

Prague, 25 April, 2014

TECHNICKÝ A ZKUŠEBNÍ ÚSTAV STAVEBNÍ PRAHA, s.p. OZNÁMENÝ SUBJEKT 1020 ÚNMZ 09

Roman Ondruška
Head Assessor

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1. General

1.1 Information about the manufacturer

- Producer: 3S LAND
  68, Maebong-gil, Naechon-myeon, Pochen-si, Gyeonggi-do, Korea
- Production plant: 3S LAND
  697-11, Hyangyang-ri, Paju-eup, Paju-si, Gyeonggi-do, Korea

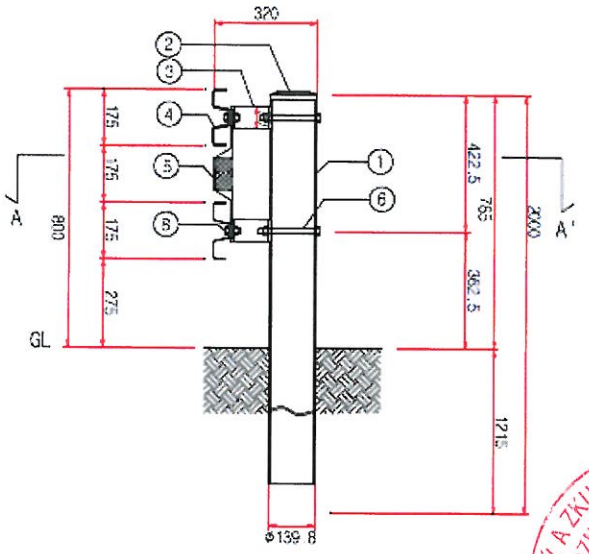
1.2 Information about the product and its intended use

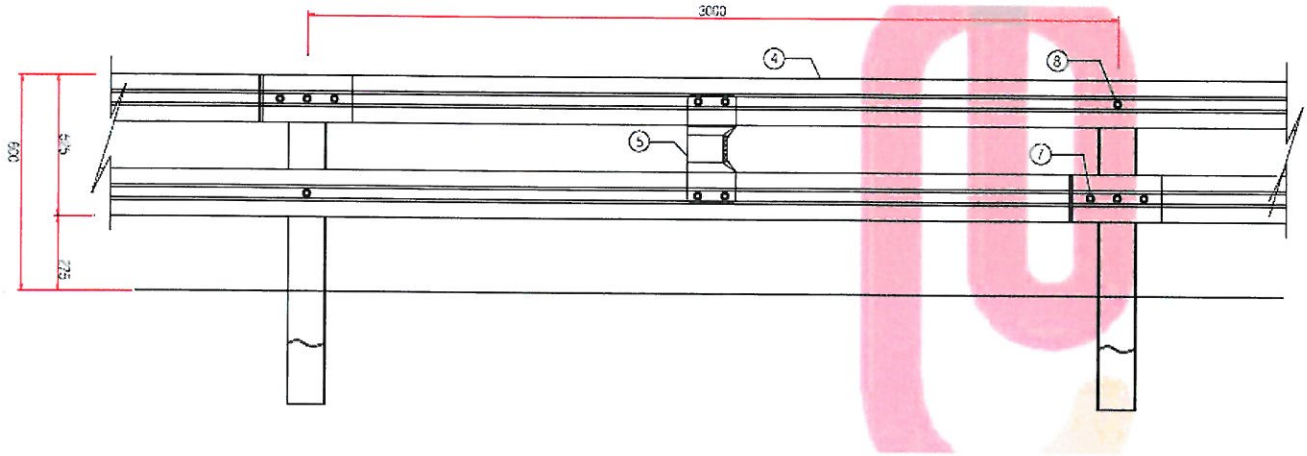
Road restraint system – safety barrier of steel, type OG-CE-N2, is a one-sided system designed for installation on roads to increase traffic safety. The safety barrier was tested pursuant to EN 1317-1 and 2 and this test demonstrated the following basic properties of the test sample.

Level of restraint	**N2**	
Impact intensity	**B**	ASI 1,1
		THIV 25 km/h
Normalized working width	**W3**	W_N 1,0 m
Normalized dynamic deflection		D_N 0,7 m
Normalized vehicle intrusion	**NPD**	
Snow removal	**NPD**	

The test sample 51,00 m long comprised the middle section of a one-sided safety barrier without terminals.

The road restraint system – safety barrier of steel, one-sided, type OG-CE-N2, comprises posts (ø139.8x4.3tx2000) spaced with an interval of 3,00 m, designed to be driven into the hardened roadside. The double rail L–6330 from sheet 3,9 mm thick, fixed to the posts using a connection material, spacing by spacer (shock absorbing connector). The height of the rail's upper edge is 800 mm and the lower edge 450 mm. All parts are protected against corrosion by galvanized coating. The system is installed in accordance with the attached drawings and the mounting instructions.





Schematic view of the safety barrier, type OG-CE-N2

1.3 List of documentation provided by the manufacturer to the assessment and verification of constancy of performance (AVCP)

- application for performance of activity of notified body – AVCP system1
- Drawings of the elements
- Assembly instruction
- Specific attest of steel 3.1 EN 10024

1.4 List of the other documentation used during the product AVCP

- None

1.5 Technical specification relating to the AVCP

- EN 1317–5+A2:2012/AC:2012 Road restraint systems – Part 5: Product requirements and evaluation of conformity for vehicle restraint systems

1.6 Information about previous AVCP

The producer did not demonstrate any previous product certification.

2 Product Assessment

2.1 Technical requirements

The product was assessed under EN 1317–5+A2:2012/AC:2012 Road restraint systems – Part 5: Product requirements and evaluation of conformity for vehicle restraint systems, with respect to the following monitored properties:

- Level of restraint
- Impact intensity
- Normalized working width
- Normalized dynamic deflection
- Normalized vehicle intrusion
- Durability
- Resistance to snow removal

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2.2 List of the Test Reports:

- Protocol on the Testing of Road Restraint Systems No. 2014-3-011-002, issued Korean Expressway Corporation Research Institute, on 1 April 2014 (impact test TB-11 and TB-32)

2.3 Evaluation of the results of the product tests and assessment

Monitored property	Test Protocol	Test procedure	Test result	Required / declared level	Evaluation
1	2	3	4	5	6
Durability – material properties	1.3.2 1.3.4 2.2.3	EN 1317-5+A2:2012 art. 6.2.1.3 EN 10024-1,2 EN 10204	Declaration, assessment, specific attest	D: Conformity of attestation with technical document., steel class S235JR under EN 10025-1	conforms
– surface treatment of steel	1.3.2 2.2.1 2.2.2 2.2.3	EN 1317-5+A2:2012 art. 6.2.1.3 EN ISO 2063 EN ISO 1461	Test Protocol 2014-3-011-002	R: composition and thickness of the surface metal	conforms
Level of restraint	2.2.1 2.2.2	EN 1317-1:2010 EN 1317-2:2010	Test Protocol 2014-3-011-002	R: required test TB 11 and TB 42	conforms for level of restraint **N2**
Impact intensity	2.2.1 2.2.2	EN 1317-1:2010 EN 1317-2:2010	Test Protocol 2014-3-011-002	R: max. ASI ≤ 1,9 at max. THIV ≤ 33 KMPH	conforms impact intensity **B** max. ASI = 1,1 at THIV = 25 KM/H
Normalized working width	2.2.1 2.2.2	EN 1317-1:2010 EN 1317-2:2010	Test Protocol 2014-3-011-002	R: $W3 = W_N \leq 1{,}0$ m	conforms **max. W_N = 1,0 m**
Normalized dynamic deflection	2.2.1 2.2.2	EN 1317-1:2010 EN 1317-2:2010	Test Protocol 2014-3-011-002	R: Determination of value	conforms **max. $D_N \leq 0{,}7$ m**
Normalized vehicle intrusion	2.2.1 2.2.2	EN 1317-1:2010 EN 1317-2:2010 Chapt. 3.5		**NPD**	-
Resistance to snow removal	2.2.1 2.2.2	EN 1317-5+A2:2012 Annex C		**NPD**	-

Evaluation conclusion: the product confirms to and complies with the declared purpose.

3 Factory Production Control Assessment

The product assessment was performed in the production plants 3S LAND, 697-11, Hyangyang-ri, Paju-eup, Paju-si, Gyeonggi-do, Korea on 1 April 2014.

3.1 Requirement of the technical specification regarding Factory Production Control:

The requirements on the production management system are stipulated in EN 1317–5+A2:2012/AC:2012 Road restraint systems – Part 5: Product requirements and evaluation of conformity for vehicle restraint systems

3.2 Evaluation of the Factory Production Control assessment results:

- The technical documentation of the producer 3S LAND contains a description of the production management system in the internal document Technological Guideline for Type OG-CE-N2.
- The production management system complies with the technical documentation and ensures that the marketed products conform to the technical specifications, and is assessed as conforming

4 Conclusion

- The sample of product fulfils the requirements of the technical specification.
- The FPC is in accordance with the harmonised technical specification and ensures that the declared performances are achieved.

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- Findings and conclusions mentioned in this Report are valid providing the conditions under which FPC assessment was carried out remain unchanged (e.g. technical regulations, technical specifications, production technology, incoming raw and manufacturing equipment).
- In compliance with provision of the CPR Art. 1.2, Annex V Surveillance Reports containing FPC assessment and evaluation have to be complementary to the technical documentation.

5 Annexes

The documents are not part of this Protocol and are kept by the author.

Prepared by: Roman Ondruška