

TÜV NORD TURKEY Industrial Services Inspection Report

INSPECTOR	Özgün Ozan TÜRK	TÜV ORDER NO.	211445326
PLACE & DATE	İTÜ Kompozit ve Yapı Lab. -03.12.2019	REPORT NO	RP-211445326-03
CUSTOMER	Link Yapı San. ve Tic. A.Ş.	MANUFACTURER	N/A
CUSTOMER ORDER NO	-	MANUFACTURER ORDER NO	-
INSPECTION DATES	03.12.2019	MANUFACTURER CONTACT	-
CUSTOMER CONTACTS	Ömer Cılız	HARD STAMP	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
REPORT TYPE	<input checked="" type="checkbox"/> Initial <input type="checkbox"/> Interm <input type="checkbox"/> Final		
ANNEXES	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		

• SUBJECT OF INSPECTION

Prestretched steel wire ropes for Seismic Brace System were subjected to tensile test under dynamic loads by following the test procedure in ANSI/ASHRAE Standart 171-2017 to rate the capacity of seismic and wind restraints of ropes and seismic link system which Link Yapı San. ve Tic. A.Ş. has (See Table 1.) and to evaluate the minimizing ability about the differential movement between a component and the supporting building structure during an earthquake or a high-wind event by determining the maximum loads the single directional single axis restraint can withstand without breakage or excessive deformation.

* ANSI/ASHRAE Standart 171-2017 was accepted as guide during inspection.

Model	Diameter (mm)	Serial Number
STB 11	1.6	0334.1.STB.511G
STB 12	2.4	0334.1.STB.512G
STB 13	3.2	0334.1.STB.513G
STB 14	4.8	0334.1.STB.515G

Table 1. Product Tested

• PROJECT PROGRESS

Three sample of each model were subjected to test for each angle 30°, 45° and 60° by using fixtures to arrange the angles. Anticipated maximum capacity loads (See Table 2) were declared by Link Yapı San. ve Tic. A.Ş. Conformity of loading cycles and frequencies were controlled and approved for each model acc. to ANSI/ASHRAE Standart 171-2017. Load application frequency was seen as 0.1 Hz as indicated in the standart. Loadings were done in periodic and continuous cycles. It was seen that Link Yapı San. ve Tic. A.Ş followed the loading steps below as indicated in the standart.

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Loading steps:

1. Starting position load : %5 of the anticipated maximum capacity load
1. Initial loading sequence : 25 complete cycles between % 50 of the anticipated maximum capacity load and starting position load
2. Increasing load sequence : Loading continued by increasing % 3.5 per cycle and continued to make cycles between starting position load.
3. End of loading sequence: Test were stopped when one of the following occurred:

- Sample breaks or fractures,
- Measure axial displacement exceeds the deformation limit as defined in Section 7.3
- The test load exceeds 2 times the manufacturer's anticipated maximum capacity load.
- Premature failure due to error in test setup, fixtures or equipment

Model	Anticipated Maximum Capacity Load (kgf)
STB 11	180
STB 12	360
STB 13	670
STB 15	1500

Table 2. Anticipated Maximum Capacity Load (kgf)

• **MAIN CONCLUSIONS & RESULT & REMARKS**

It was seen that Link Yapı San. ve Tic. A.Ş followed the test procedure and obtained test results as indicated in ANSI/ASHRAE Standart 171-2017. Test results of products can be seen below.

TEST RESULTS						
Model	Diameter (mm)	Serial Number	Failure Load (kgf)	Safety Factor*	Maximum Allowable Design Load (kgf)	Type of Failure
STB 11	1.6	0334.1.STB.511G	203 kgf	1.5	135 kgf	Breakage
STB 12	2.4	0334.1.STB.512G	465 kgf	1.5	310 kgf	Breakage
STB 13	3.2	0334.1.STB.513G	802 kgf	1.5	535 kgf	Breakage
STB 15	4.8	0334.1.STB.515G	1.680 kgf	1.5	1.120 kgf	Breakage
Remarks						
During the inspection and testimony tests, all breaks took place on the rope. This has allowed us to observe that the brackets in the seismic link system have a higher breaking strength than the breaking strength of the ropes.						
* Safety Factor is defined according to NFPA-13 standart.						

Table 3. Test Results

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• PHOTOS FROM INSPECTION



Pic.1 – Product tested



Pic.2- Fixtures



Pic.3 – Test Setup and Test Machine (647 Hydraulic Wedge Grip)



Pic 4- Product example during the test (30 °)

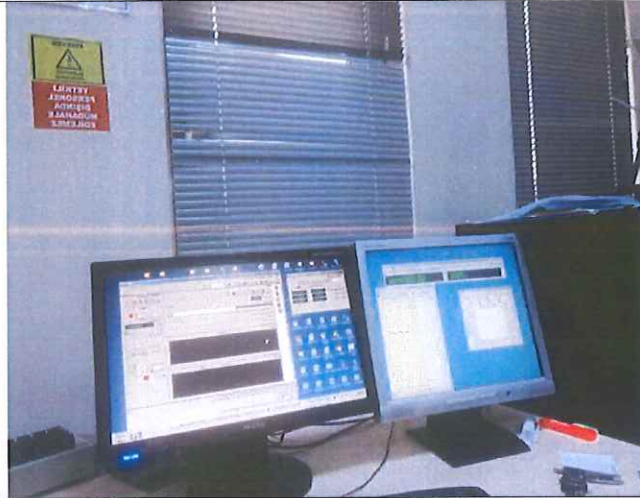
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Pic.5 – Product example during the test (45 °)



Pic6-Product example during the test (60 °)



Pic7- Process follow softwares



Pic8- Locking mechanism

Inspected by

Name: Özgün Ozan TÜRK

Signature:



Reviewed by:

Name: Alican Taşkıran

Signature:



Sent to: CLIENT

MANUFACTURER

ARCHIVE

Tüv Teknik Kontrol ve Belgelendirme A.Ş


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GÖZETİM SERTİFİKASI

Sertifika Numarası.: 211445326-19/03

Üretici/taşıyıcının adı ve adresi: **Link Yapı San. ve Tic. A.Ş.**
(GOSB) Gebze Organize Sanayi Bölgesi 1000.
Sokak No: 1016 41430 Çayırova / Kocaeli

Aşağıda özellikleri belirtilmiş ürünün TÜV Teknik ile sağlanan anlaşma gerekliliklerini sağladığı, denetim sonuçlarına göre onaylanmıştır.

Ürün,  soğuk mühür ile mühürlenmiştir; Evet Hayır: İsim plakasında TÜV Teknik mühürü.

Denetimin Referans Standardı: **ANSI/ASHRAE Standart 171-2017**

Ürün Açıklaması: **Sismik Halat Seti (Sismik Destek Sistemi için önceden gerilmiş çelik tel halatlar)**

Seri Numarası: **0334.1.STB.511G, 0334.1.STB.512G, 0334.1.STB.513G, 0334.1.STB.515G**

Denetim Raporu Numarası: **RP-211445326-03**

Model & Tip: **STB 11, STB 12, STB 13, STB 15**

Denetim tarihi veya periyodu: **03.12.2019**

Üretim lokasyonu: **(GOSB) Gebze Organize Sanayi Bölgesi 1000.**
Sokak No: 1016 41430 Çayırova / Kocaeli

Denetçiler: **Özgün Ozan TÜRK**

Istanbul , Düzenlenme tarihi: 03.12.2019

Ürünü Sertifikaladılan / TÜV Teknik Kontrol ve Belgelendirme A.Ş.

Mr. Alican Taşkiran



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ANNEX I



Sertifika No.: 211445326-19/03

Denetim esnasında, her bir tipden üç örnek ANSI / ASHRAE Standardı 171-2017'deki test prosedürü izlenerek dinamik yükler altında gerilmeye tabi tutulmuş ve sonuçlar standartta belirtildiği şekliyle elde edilmiştir. Bu testler TÜV Teknik Kontrol ve Belgelendirme A.Ş. tanıklığında Link Yapı San. ve Tic. A.Ş tarafından yürütülmüştür.

Denetim esnasında, Link Yapı San. ve Tic. A.Ş'nin, ANSI / ASHRAE Standard 171-2017'de belirtilen test prosedürünü başarılı bir şekilde takip ettiği ve test sonuçlarını elde ettiği görülmüştür. Ürünlerin test sonuçları aşağıdaki tabloda görülebilir.

Denetim Sonucu: **BAŞARILI**

TEST SONUÇLARI						
Model	Çap (mm)	Seri Numarası	Minimum Başarısızlık Yükü (kgf)	Güvenlik Faktörü*	İzin Verilen Maksimum Tasarım Yükü (kgf)	Başarısızlık Türü
STB 11:Sarı	1.6	0334.1.STB.511G	203	1.5	135	Kırılma
STB 12:Kırmızı	2.4	0334.1.STB.512G	465	1.5	310	Kırılma
STB 13:Beyaz	3.2	0334.1.STB.513G	802	1.5	535	Kırılma
STB 15:Mavi	4.8	0334.1.STB.515G	1.680	1.5	1.120	Kırılma

Uyarılar
Denetim ve tanıklık testleri sırasında, tüm kırılmalar halatta gerçekleşmiş. Bu, sismik bağlantı sistemindeki desteklerin halatların kopma mukavemetinden daha yüksek bir kopma mukavemetine sahip olduğunu gözlemlememize olanak sağlamıştır.

Halatlar kilit mekanizması ile birlikte teste tabii tutulmuştur. (Bkz. RP-211445326-03 pic8)

* Güvenlik Faktörü NFPA-13 standardına göre tanımlanmıştır.

Istanbul , Düzenlenme Tarihi: 03.12.2019

Ürünü Sertifikaladılan TÜV Teknik Kontrol ve Belgelendirme A.Ş.

Mr, Alican Taşkiran



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INSPECTION CERTIFICATE

Certificate No.: 211445326-19/03

Name and address of bearer/
manufacturer:

Link Yapı San. ve Tic. A.Ş.
(GOSB) Gebze Organize Sanayi Bölgesi 1000.
Sokak No: 1016 41430 Çayırova / Kocaeli

We hereby certify that according to the results of the inspection, the product mentioned below fulfills the contractual requirements governing mission entrusted to TÜV Teknik.

Product is marked with
nameplate



hard stamp Yes No: TÜV Teknik hard stamp on the

Inspected according to

ANSI/ASHRAE Standard 171-2017

Description of product:

Steel Wire Rope (Prestreched steel wire ropes for
Seismic Brace System)

Model & Type:

STB 11, STB 12, STB 13, STB 15

Serial Number:

0334.1.STB.511G, 0334.1.STB.512G,
0334.1.STB.513G, 0334.1.STB.515G

Inspection Report No:

RP-211445326-03

Inspection date or period:

03.12.2019

Place of manufacture:

(GOSB) Gebze Organize Sanayi Bölgesi 1000.
Sokak No: 1016 41430 Çayırova / Kocaeli

Inspected by:

Özgün Ozan TÜRK

Istanbul , Issue Date:03.12.2019

Certifier for Product of TÜV Teknik
Kontrol ve Belgelendirme A.Ş.

Mr. Alican Taşkiran

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ANNEX I

Certificate No.: 211445326-19/03

Three sample of each type were subjected to tensile test under dynamic loads by following the test procedure in ANSI/ASHRAE Standard 171-2017 and results were obtained acc. to this standard. These tests were conducted by Link Yapı San. ve Tic. A.Ş. under witnesses of TÜV Teknik Kontrol ve Belgelendirme A.Ş.

It was seen that Link Yapı San. ve Tic. A.Ş successfully followed the test procedure and obtained the results as indicated in ANSI/ASHRAE Standard 171-2017. Test results of products can be seen on the table below
Inspection Result: **SATISFACTORY**

TEST RESULTS						
Model	Diameter (mm)	Serial Number	Minimum Failure Load (kgf)	Safety Factor *	Maximum Allowable Design Load (kgf)	Type of Failure
STB 11:Yellow	1.6	0334.1.STB.511G	203	1.5	135	Breakage
STB 12:Red	2.4	0334.1.STB.512G	465	1.5	310	Breakage
STB 13:White	3.2	0334.1.STB.513G	802	1.5	535	Breakage
STB15: Blue	4.8	0334.1.STB.515G	1.680	1.5	1.120	Breakage

Remarks
During the inspection and testimony tests, all breaks took place on the rope. This has allowed us to observe that the brackets in the seismic link system have a higher breaking strength than the breaking strength of the ropes.
The ropes were tested with locking mechanism (See RP-211445326-03 Pic8).

* Safety Factor is defined according to NFPA-13 standard.

Istanbul , Issue Date: 03.12.2019

Certifier for Product of TÜV Teknik Kontrol ve Belgelendirme A.Ş.

Mr. Alican TAŞKIRAN