



TEST REPORT



98, Gyoyukwon-ro, Gwacheon-si, Gyeonggi-do, 13810, Korea

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Report No : TAK-2024-160034

Receipt Date : 2024.11.08

Representative : Se-Hong, Min, Yeong-Seok, Yang, Woo-Jin, Kim

Test Completion Date : 2025.01.13

Company name : DONGIL-STEEL MFG.Co., Ltd

Address : #1F-1ho, 474-40, Anseongmatchum-Daero, Miyang-Myeon, Anseong-si, Gyeonggi-do, Korea

Sample name : PC Prestressing strand [heteromorphic 3 line 2.9mm(SWPD3L)]

Test Results

TEST ITEM	UNIT	SAMPLE	RESULT	TEST METHOD	SITE
Relaxation (1 000 h)	%	-	1.4	KS D 7002 : 2019	AK

- Refer to relaxation test data sheet

- AK: 98, Gyoyukwon-ro, Gwacheon-si, Gyeonggi-do, 13810, Korea

- Usage of Report : QUALITY CONTROL

- Note : 1. The test results of this test report are only limited in to the samples and sample names provided by the client and do not guarantee the quality of all products of the client. You Can check website (www.ktr.or.kr) or QR code to verify the authenticity of the certificate.
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The above testing certificate is the accredited test result by Korea Laboratory Accreditation Scheme, which signed the ILAC-MRA.

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2025.01.13

Korea Testing & Research Institute

Accredited by KOLAS, Republic of KOREA

President *Kim Hyun cheol*

QR Code for forgery

RELAXATION TEST

▶ Report NO. : TAK-2024-160034

▶ Sample Name : PC강연선[이형 3연선 2.9mm(SWPD3L)]
PC Prestressing strand [heteromorphic 3 line 2.9mm(SWPD3L)]

▶ Test Method : KS D 7002:2019

▶ Test Result ;

-Test Item : Relaxation (1 000 h)

-Initial Load : 26.75 (kN)

-Final Load : 26.38 (kN)

-Initial Reading of Temperature : 20(℃)

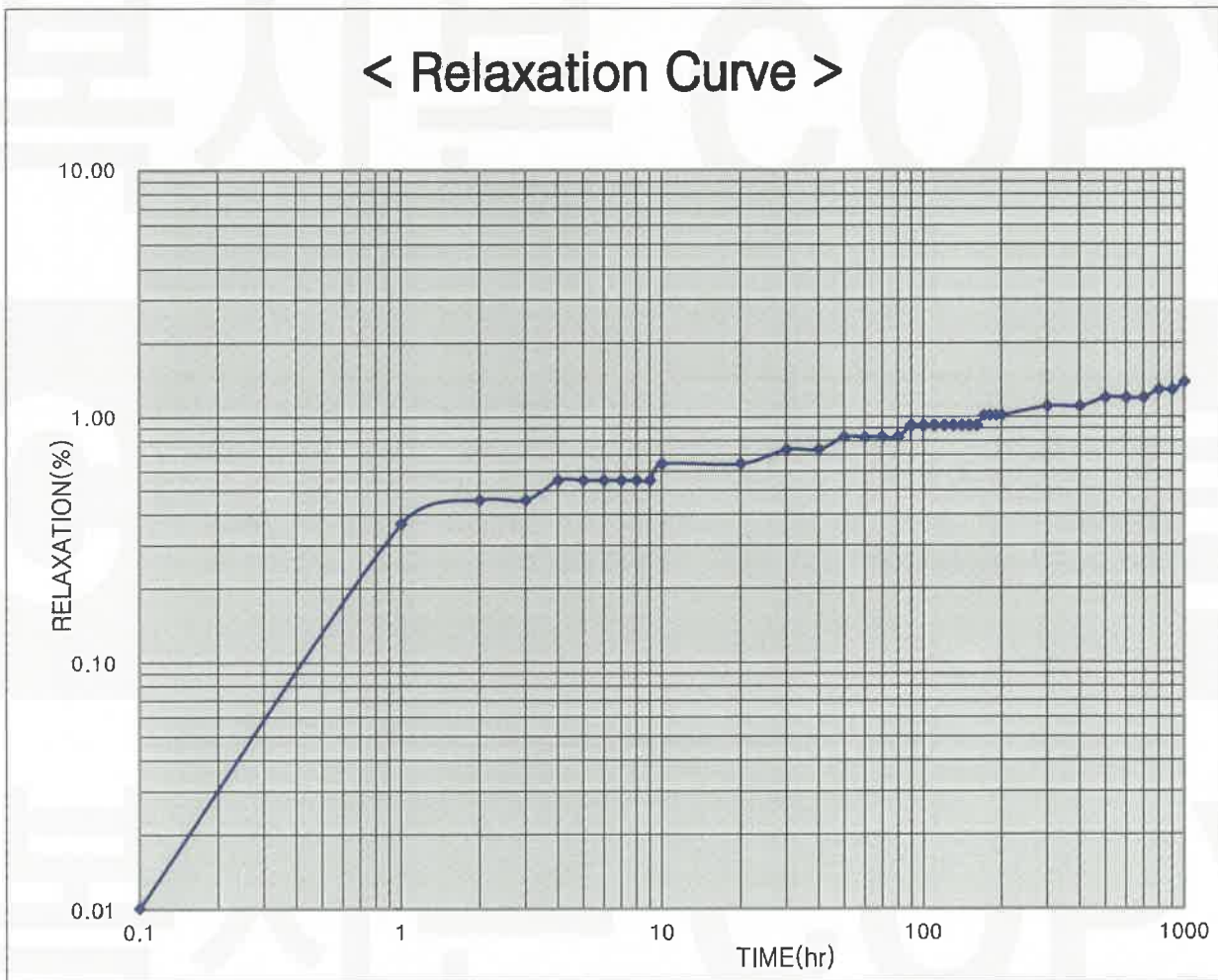
-Final Reading of Temperature : 21(℃)

TIME (h)	LOAD (kN)	RELAXATION RATE (%)	TIME (h)	LOAD (kN)	RELAXATION RATE (%)
1	26.65	0.37	110	26.51	0.92
2	26.63	0.46	120	26.51	0.92
3	26.63	0.46	130	26.51	0.92
4	26.60	0.55	140	26.51	0.92
5	26.60	0.55	150	26.51	0.92
6	26.60	0.55	160	26.51	0.92
7	26.60	0.55	170	26.48	1.01
8	26.60	0.55	180	26.48	1.01
9	26.60	0.55	190	26.48	1.01
10	26.58	0.64	200	26.48	1.01
20	26.58	0.64	300	26.46	1.10
30	26.56	0.73	400	26.46	1.10
40	26.56	0.73	500	26.43	1.19
50	26.53	0.83	600	26.43	1.19
60	26.53	0.83	700	26.43	1.19
70	26.53	0.83	800	26.41	1.28
80	26.53	0.83	900	26.41	1.28
90	26.51	0.92	1000	26.38	1.37
100	26.51	0.92			

RELAXATION TEST

- ▶ **Report NO. :** TAK-2024-160034
- ▶ **Sample Name :** PC강연선[이형 3연선 2.9mm(SWPD3L)]
PC Prestressing strand [heteromorphic 3 line 2.9mm(SWPD3L)]
- ▶ **Test Method :** KS D 7002:2019

< Relaxation Curve >



▶ **RELAXATION RATE (Test Time : 1 000 hours):**

- Initial Load : Minimum Breaking Strength $\times$ 70(%) = 26.75 (kN)
- Final Load : 26.38 (kN)

▶ **RELAXATION RATE(%)** = $\frac{\text{Initial Load} - \text{Final Load}}{\text{Initial Load}} \times 100 (\%) = 1.4(\%)$