BANGKOK STEEL WIRE CO.,LTD.

24/10 MOO 6 BANGSAOTHONG, BANGSAOTHONG MINOR DISTRICT,
SAMUTPRAKARN 10540, THAILAND.
TEL. (66) -2312-8216-19, (66) -2740-0835-36 FAX. (66)-2312-8220

MILL TEST CERTIFICATE

Customer :

Description Of Goods : 7-WIRE STRAND FOR PRESTRESSED CONCRETE
(9.53-1860-Low Relaxation Strand ASTM A416/A416M-99)

Nominal Diameter : 9.53 mm.

Specification : ASTM A416/A416M-99

Certificate No : 002

Page No : 1/1

Date : May 26, 2007

Invoice No :

Letter Of Credit No :

Issuing Bank :

EVALUATION & QUALITY CONTROL DIVISION BSW QUALITY ASSURANCE SECTION

No.	Coil No.	Diameter (mm.)	Mass (g/m.)	Section Area ($mm.^2$)	Tensile Load (kN.)	1%Extension Yield Load (kN.)	Elongation (%)	Young's Modulus ($kN/mm.^2$)	Length Approx (m.)	Weight Coil (Kg.)
1	209-775-705-11	9.60	434.2698	55.3805	112.40	106.00	5.25%	204.0430	7,933	3,445
2	209-775-705-12	9.60	434.2698	55.3805	112.40	106.00	5.25%	204.0430	7,878	3,421
3	209-864-704-11	9.56	433.2337	55.2319	112.50	106.00	5.25%	203.9708	7,947	3,443
4	209-864-704-12	9.56	433.2337	55.2319	112.50	106.00	5.25%	203.9708	7,947	3,443
5	209-766-703-11	9.54	432.3428	55.2319	113.10	104.00	5.21%	203.6867	7,945	3,435
6	209-766-703-12	9.54	432.3428	55.2319	113.10	104.00	5.21%	203.6867	8,174	3,534
	Min.	9.54	432.3428	55.2319	112.40	104.00	5.21%	203.6867		**6**
	Max.	9.60	434.2698	55.3805	113.10	106.00	5.25%	204.0430	Grand total	**20,721**
	Avg.	9.57	433.2821	55.2814	112.67	105.33	5.24%	203.9002	-	-
	Lower Spec Limit.	**9.38**	**423.3600**	**53.7040**	**102.30**	**92.10**	**3.50%**	**195.0000**	**ASTM A416/A416M-99**	
	Upper Spec Limit.	**10.18**	**449.2800**	**56.9920**	-	-	-	**215.0000**	**TIS. 420-2540(1997)**	

Comment : Left Hand Lay

Approve	Check	Issue

SALES OFFICE : 31ST FLOOR ITALTHAI TOWER, 2034/132-161 NEW PETCHBURI RD., BANGKOK 10320, THAILAND.
TEL. (66) -2716-1600 EXT. 5801-5811, (66) -2716-1575 FAX. (66) -2716-1579

BANGKOK STEEL WIRE CO.,LTD.

24/10 MOO 6 BANGSAOTHONG, BANGSAOTHONG MINOR DISTRICT,
SAMUTPRAKARN 10540, THAILAND.
TEL. (66) -2312-8216-19, (66) -2740-0835-36 FAX. (66)-2312-8220

MILL TEST CERTIFICATE

Customer :

Description Of Goods : 7-WIRE STRAND FOR PRESTRESSED CONCRETE
(12.70-1860-Low Relaxation Strand ASTM A416/A416M-99)

Nominal Diameter : 12.70 mm.

Specification : ASTM A416/A416M-99

Certificate No : 003

Page No : 1/1

Date : May 26, 2007

Invoice No :

Letter Of Credit No :

Issuing Bank :

EVALUATION & QUALITY CONTROL DIVISION BSW QUALITY ASSURANCE SECTION

No.	Coil No.	Diameter (mm.)	Mass (g/m.)	Section Area ($mm.^2$)	Tensile Load (kN.)	1%Extension Yield Load (kN.)	Elongation (%)	Young's Modulus ($kN/mm.^2$)	Length Approx (m.)	Weight Coil (Kg.)
1	198-278-498-21	12.90	781.1445	100.8067	193.54	183.50	5.49%	203.3595	4,185	3,269
2	198-278-498-22	12.90	781.1445	100.8067	193.54	183.50	5.49%	203.3595	4,259	3,327
3	198-278-496-21	12.86	781.3016	100.6038	193.10	183.50	5.20%	203.7697	4,087	3,193
4	198-278-496-22	12.86	781.3016	100.6038	193.10	183.50	5.20%	203.7697	4,341	3,392
5	175-196-491-21	12.90	780.3613	100.8067	192.96	182.50	5.54%	201.8795	4,151	3,239
6	175-196-491-22	12.90	780.3613	100.8067	192.96	182.50	5.54%	201.8795	4,174	3,257
Min.		12.86	780.3613	100.6038	192.96	182.50	5.20%	201.8795		**6**
Max.		12.90	781.3016	100.8067	193.54	183.50	5.54%	203.7697	Grand total	**19,677**
Avg.		12.89	780.9358	100.7391	193.20	183.17	5.41%	203.0029	-	-
Lower Spec Limit.		**12.55**	**759.5000**	**96.7260**	**183.70**	**165.30**	**3.50%**	**195.0000**	**ASTM A416/A416M-99**	
Upper Spec Limit.		**13.35**	**806.0000**	**102.6480**	-	-	-	**215.0000**	**TIS. 420-2540(1997)**	

Comment : Left Hand Lay

Approve	Check	Issue

QA-FB-06, แก้ไขครั้งที่ : 6, วันที่อนุมัติใช้ : 02 พฤษภาคม 2549

SALES OFFICE : 31ST FLOOR ITALTHAI TOWER, 2034/132-161 NEW PETCHBURI RD., BANGKOK 10320, THAILAND.
TEL. (66) -2716-1600 EXT. 5801-5811, (66) -2716-1575 FAX. (66) -2716-1579

BANGKOK STEEL WIRE CO.,LTD.

24/10 MOO 6 BANGSAOTHONG, BANGSAOTHONG MINOR DISTRICT,
SAMUTPRAKARN 10540, THAILAND.
TEL. (66) -2312-8216-19, (66) -2740-0835-36 FAX. (66)-2312-8220

MILL TEST CERTIFICATE

Customer :

Description Of Goods : 7-WIRE STRAND FOR PRESTRESSED CONCRETE
(15.24-1860-Low Relaxation Strand ASTM A416/A416M-99)

Nominal Diameter : 15.24 mm.

Specification : ASTM A416/A416M-99

Certificate No : 004

Page No : 1/1

Date : May 26, 2007

Invoice No :

Letter Of Credit No :

Issuing Bank :

EVALUATION & QUALITY CONTROL DIVISION BSW QUALITY ASSURANCE SECTION

No.	Coil No.	Diameter (mm.)	Mass (g/m.)	Section Area ($mm.^2$)	Tensile Load (kN.)	1%Extension Yield Load (kN.)	Elongation (%)	Young's Modulus ($kN/mm.^2$)	Length Approx (m.)	Weight Coil (Kg.)
1	215-769-556-11	15.32	1,102.1542	141.5918	268.50	245.00	5.13%	203.8141	2,899	3,195
2	215-769-556-12	15.32	1,102.1542	141.5918	268.50	245.00	5.13%	203.8141	2,905	3,202
3	199-078-555-11	15.30	1,101.6838	141.5918	268.60	245.00	5.23%	203.8141	3,054	3,364
4	199-078-555-12	15.30	1,101.6838	141.5918	268.60	245.00	5.23%	203.8141	3,004	3,309
5	199-008-543-11	15.32	1,103.0992	142.1472	267.51	244.00	5.26%	202.2552	2,905	3,205
6	199-008-543-12	15.32	1,103.0992	142.1472	267.51	244.00	5.26%	202.2552	2,901	3,200
Min.		15.30	1,101.6838	141.5918	267.51	244.00	5.13%	202.2552		**6**
Max.		15.32	1,103.0992	142.1472	268.60	245.00	5.26%	203.8141	Grand total	**19,475**
Avg.		15.31	1,102.3124	141.7769	268.20	244.67	5.21%	203.2945	-	-
Lower Spec Limit.		**15.09**	**1,079.9600**	**137.2000**	**260.70**	**234.60**	**3.50%**	**195.0000**	**ASTM A416/A416M-99**	
Upper Spec Limit.		**15.89**	**1,146.0800**	**145.6000**	-	-	-	**215.0000**	**TIS. 420-2540(1997)**	

Comment : Left Hand Lay

Approve	Check	Issue

SALES OFFICE : 31ST FLOOR ITALTHAI TOWER, 2034/132-161 NEW PETCHBURI RD., BANGKOK 10320, THAILAND.
TEL. (66) -2716-1600 EXT. 5801-5811, (66) -2716-1575 FAX. (66) -2716-1579

BANGKOK STEEL WIRE CO.,LTD.

24/10 MOO 6 BANGSAOTHONG, BANGSAOTHONG MINOR DISTRICT,
SAMUTPRAKARN 10540, THAILAND.
TEL. (66)-2312-8216-19, (66)-2740-0835-36 FAX. (66)-2312-8220

MILL TEST CERTIFICATE

Customer :

Description Of Goods : 7-WIRE STRAND FOR PRESTRESSED CONCRETE
(15.2-1725-Low Relaxation Strand ASTM A416/A416M-99)

Nominal Diameter : 15.2 mm.

Specification : ASTM A416/A416M-99

Certificate No : 001

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Date : May 26, 2007

Invoice No :

Letter Of Credit No :

Issuing Bank :

EVALUATION & QUALITY CONTROL DIVISION BSW QUALITY ASSURANCE SECTION

No.	Coil No.	Diameter (mm.)	Mass (g/m.)	Section Area ($mm.^2$)	Tensile Load (kN.)	1%Extension Yield Load (kN.)	Elongation (%)	Young's Modulus ($kN/mm.^2$)	Length Approx (m.)	Weight Coil (Kg.)
1	199-078-540-11	15.34	1,103.7641	142.4712	266.84	244.00	5.16%	201.7951	2,318	2,559
2	199-078-540-12	15.34	1,103.7641	142.4712	266.84	244.00	5.16%	201.7951	2,317	2,557
3	199-074-538-11	15.35	1,103.7466	142.0739	267.28	245.00	5.18%	202.3594	2,310	2,550
4	199-074-538-12	15.35	1,103.7466	142.0739	267.28	245.00	5.18%	202.3594	2,316	2,556
5	193-249-537-11	15.30	1,102.0981	142.2330	266.12	244.00	5.18%	202.1332	2,313	2,549
6	193-249-537-12	15.30	1,102.0981	142.2330	266.12	244.00	5.18%	202.1332	2,315	2,551
	Min.	15.30	1,102.0981	142.0739	266.12	244.00	5.16%	201.7951		**6**
	Max.	15.35	1,103.7641	142.4712	267.28	245.00	5.18%	202.3594	Grand total	**15,322**
	Avg.	15.33	1,103.2029	142.2594	266.75	244.33	5.17%	202.0959	-	-
	Lower Spec Limit.	**14.80**	**1,072.1200**	**136.6120**	**240.20**	**216.20**	**3.50%**	**195.0000**	**ASTM A416/A416M-99**	
	Upper Spec Limit.	**15.60**	**1,137.7600**	**144.9760**	-	-	-	**215.0000**	**TIS. 420-2540(1997)**	

Comment : Left Hand Lay

Approve	Check	Issue

SALES OFFICE : 31ST FLOOR ITALTHAI TOWER, 2034/132-161 NEW PETCHBURI RD., BANGKOK 10320, THAILAND.
TEL. (66)-2716-1600 EXT. 5801-5811, (66)-2716-1575 FAX. (66)-2716-1579