M.F.O.C.

Marchan Fiber Optic Comm., Inc.

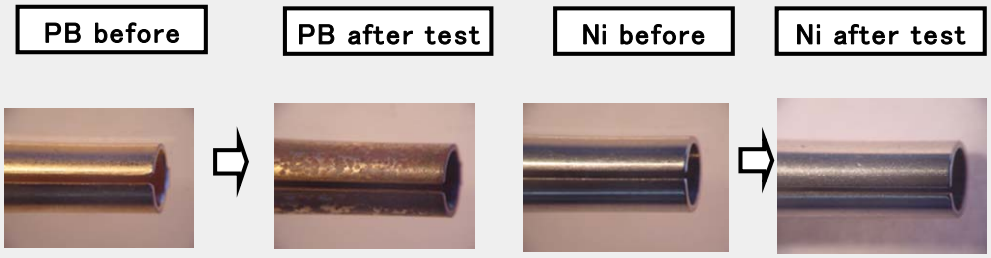
Test Result

DOCUMENT NAME: QUALIFICATION TEST REPORT	SUBJE:CT SLEEVE TEST	DATA SHEET NO.:MR052810 PAGE: 1 OF 3
TESTING STANDARD:JISC5161		TESTING MACHINE:AQ2140

Peg-1 (Result)

No.	項目	Conditions	規格	Sample type	Material	Result	Average	Maximum	Minimum
1	Plug in and out test	500 times plug in and out for testing durablity	・Insertion Loss before test: below0.5db After test:blow 0.5db	Assemled in adapter	Ni	before test	0.08	0.09	0.06
						500 times	0.04	0.05	0.03
					PB	before test	0.14	0.16	0.12
						500 times	0.10	0.12	0.07
2	Splashing salt water	5% of salt water and 35 degree celcius. 48 hours	・Insertion Loss before test: below0.5db After test:blow 0.5db	Assemled in adapter	Ni	before test	0.09	0.12	0.05
						after test	0.04	0.07	0.02
					PB	before test	0.10	0.16	0.07
						after test	0.14	0.18	0.11
				Sleeves only	Ni	before test	0.10	0.15	0.06
						after test	0.07	0.08	0.06
					PB	before test	0.11	0.12	0.10
						after test	0.49	1.03	0.10
3	Temperature cycle	－25℃～＋85℃ at -25 degree and 85 degree, sleeves are left for 0.5hours. The test was conducted for 100 times.	・Insertion Loss before test: below0.5db After test:blow 0.5db	Assemled in adapter	Ni	before test	0.07	0.10	0.05
						after test	0.06	0.06	0.05
					PB	before test	0.09	0.12	0.05
						after test	0.08	0.08	0.07

Peg-2 (Pictures after splashing salt water)



***Japanese nickel and traditional copper sleeve of spray characteristics are as follows:**

1. The Japanese nickel sleeve is made of nickel alloy which contains 99.5% nickel.
2. Japanese nickel sleeve can pass the Salt Spray test, but copper sleeve can't pass the test. From the result of this Salt Spray test, we can also conclude that Japanese Nickel sleeve is more intrinsically resistant to corrosion than copper sleeve.
3. Basically, material properties of nickel sleeve itself is relatively stable, so its performance of the withdrawal force and the insertion loss values is superior to the traditional copper sleeve. Under the Plug In and Out Test in 2000 times, Japanese nickel sleeve is proven to be as suitable as ceramic sleeve for singlemode application, but copper sleeve is not suitable for singlemode application at all.

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Marchan Fiber Optic Comm., Inc.

Test Result

DOCUMENT NAME: QUALIFICATION TEST REPO	SUBJE:CT SLEEVE TEST	DATA SHEET NO.:MR052810 PAGE: 2 OF 3
TESTING STANDARD:JISC5161		TESTING MACHINE:AQ2140

Peg－3 splashing salt water

Insertion loss result

	Before the test				After the test				Comment
	1回	2回	3回	平均	1回	2回	3回	平均	
Ni sleeve itself									
Ni－1	-0.11	-0.12	-0.07	-0.10	-0.08	-0.07	-0.07	-0.07	No problem
Ni－2	-0.08	-0.06	-0.06	-0.07	-0.06	-0.05	-0.05	-0.05	
Ni－3	-0.05	-0.06	-0.06	-0.06	-0.05	-0.05	-0.04	-0.05	
Ni adapter assembled in an adapter									
AN－1	-0.10	-0.08	-0.08	-0.09	-0.07	-0.07	-0.06	-0.07	No Problem
AN－2	-0.06	-0.07	-0.06	-0.06	-0.05	-0.06	-0.07	-0.06	
AN－3	-0.13	-0.12	-0.09	-0.11	-0.11	-0.07	-0.07	-0.08	
PB Sleeve itself									
PB－1	-0.10	-0.14	-0.11	-0.12	-0.10	-0.07	-0.14	-0.10	It becomes rusted. The PB becomes fragile.
PB－2	-0.10	-0.11	-0.08	-0.10	-0.50	-0.18	-2.41	-1.03	
PB－3	-0.16	-0.11	-0.07	-0.11	-0.16	-0.80	-0.07	-0.34	
PB sleeve assemled in Adapter									
APB－1	-0.17	-0.15	-0.17	-0.16	-0.13	-0.08	-0.20	-0.14	Testing plug becomes brown and insertionloss became unstable.
APB－2	-0.07	-0.07	-0.06	-0.07	-0.11	-0.11	-0.12	-0.11	
APB－3	-0.07	-0.05	-0.12	-0.08	-0.06	-0.22	-0.27	-0.18	
Heat Cycle									
HN－1	-0.10	-0.11	-0.09	-0.10	-0.06	-0.06	-0.06	-0.06	No problem
HN－2	-0.09	-0.07	-0.07	-0.08	-0.06	-0.05	-0.05	-0.05	
HN－3	-0.07	-0.05	-0.05	-0.06	-0.06	-0.05	-0.05	-0.05	
Heat Cycle									
HPB－1	-0.12	-0.07	-0.10	-0.10	-0.09	-0.06	-0.06	-0.07	No problem
HPB－2	-0.14	-0.14	-0.08	-0.12	-0.08	-0.08	-0.07	-0.08	
HPB－3	-0.07	-0.04	-0.04	-0.05	-0.11	-0.09	-0.05	-0.08	

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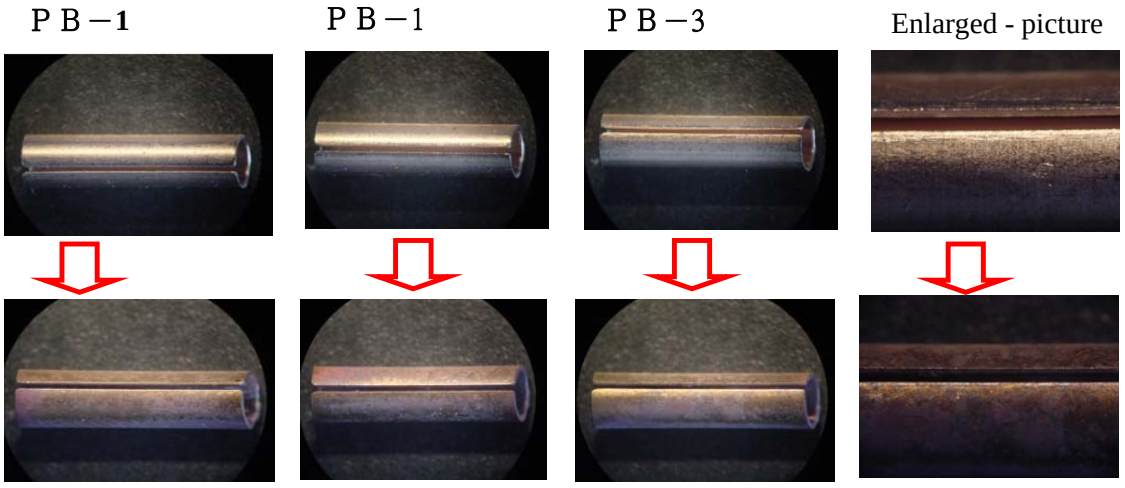
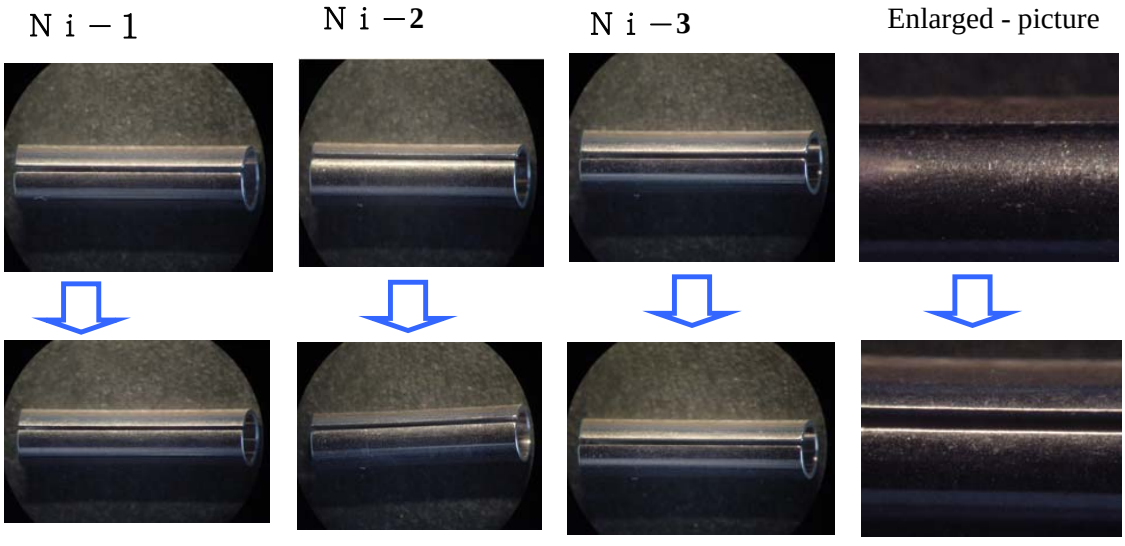
Peg-4 Photos after splashing salt water





SC sleeve Test in 2,000 times

2010/7/8

SCスリーブ 2000回挿抜テスト

Nickel sleeve (Japan)	Insertion Loss 挿入損失		Withdrawal Force 保持力	
	A-side	B-side	A-side	B-side
1回目	0.02	0.05	320	275
100回目	0.02	0.01	281	288
200回目	0.01	0.05	339	287
300回目	0.01	0.02	328	290
400回目	0.01	0.04	309	292
500回目	0.01	0.05	287	281
600回目	0.01	0.06	321	277
700回目	0.01	0.02	339	288
800回目	0.02	0.04	282	265
900回目	0.01	0.02	325	254
1000回目	0.01	0.03	320	272
1100回目	0.01	0.02	335	285
1200回目	0.01	0.03	294	288
1300回目	0.01	0.01	317	296
1400回目	0.01	0.04	338	296
1500回目	0.01	0.04	325	308
1600回目	0.02	0.02	319	298
1700回目	0.02	0.03	323	296
1800回目	0.01	0.07	280	301
1900回目	0.06	0.03	278	312
2000回目	0.01	0.01	282	292
MAX	0.06	0.07	339	312
MIN	0.01	0.01	278	254
AVE	-	-	312	288

Ceramic sleeve (China)	Insertion Loss 挿入損失		Withdrawal Force 保持力	
	A-side	B-side	A-side	B-side
1回目	0.02	0.02	540	501
100回目	0.03	0.10	484	479
200回目	0.03	0.12	347	424
300回目	0.06	0.12	360	447
400回目	0.06	0.01	381	468
500回目	0.06	0.09	441	455
600回目	0.08	0.13	358	444
700回目	0.01	0.08	370	441
800回目	0.00	0.05	394	435
900回目	0.06	0.07	366	445
1000回目	0.02	0.07	325	415
1100回目	0.04	0.07	344	414
1200回目	0.09	0.09	329	396
1300回目	0.02	0.12	326	440
1400回目	0.03	0.06	357	449
1500回目	0.04	0.08	331	409
1600回目	0.02	0.09	335	420
1700回目	0.03	0.06	357	428
1800回目	0.07	0.08	352	458
1900回目	0.05	0.08	358	409
2000回目	0.03	0.08	389	453
MAX	0.09	0.13	540	501
MIN	0.00	0.01	325	396
AVE	-	-	374	440

PB sleeve	Insertion Loss 挿入損失		Withdrawal Force 保持力	
	A-side	B-side	A-side	B-side
1回目	0.17	0.18	297	299
100回目	0.18	0.17	280	312
200回目	0.18	0.17	235	215
300回目	0.21	0.14	220	171
400回目	0.21	0.14	212	155
500回目	0.12	0.10	193	118
600回目	0.08	0.09	182	196
700回目	0.10	0.12	143	173
800回目	0.20	0.27	156	185
900回目	0.20	0.36	172	131
1000回目	0.23	0.22	145	141
1100回目	0.15	0.26	95	141
1200回目	0.23	0.24	182	142
1300回目	0.12	0.10	178	112
1400回目	0.09	0.18	186	145
1500回目	0.20	0.19	176	166
1600回目	0.20	0.23	127	176
1700回目	0.22	0.23	140	113
1800回目	0.19	0.17	130	166
1900回目	0.24	0.18	108	156
2000回目	0.22	0.21	138	128
MAX	0.24	0.36	297	312
MIN	0.08	0.09	95	112
AVE	-	-	176	169

***The characteristic analysis is as follows:**

1. Accroding to the above test reports, we can conculde that insretion loss & withdrawal force of both nickel sleeve and ceramic sleeve can easily pass the strick Plug In and Out Test in 2000 times, but PB sleeve can't pass the test .
2. The SC Ceramic sleeve is stable, but the chance of breakage is 4/10000.
3. The LC ceramic sleeve, its chance of breakage may reach as much as or more likely 10/10000.
   As far as Japanese nickel sleeve, the chance of breakage is zero.
4. The superiority of Japanese nickel sleeve not only is proven to achieve the same performance and quality level as ceramic sleeve, but also its cost is more advantage in the market.