

**Status of Bonding
R1N, R1S, R3 of TEC
University of Hamburg**

Peter Schleper

CMS tracker meeting, April 2004



Bonding @ Hamburg

Peter Schleper
Tracker Meeting
April 2004

Final version of bonding jigs
(flexible step height between sensor and frame)

final modules	R1N	R1S	R3	
received	4	4	11	
bonded	4	4	7	(4 just arrived)
tested	4	4	7	
good	3	4	6	(2 damaged)

All data available in database

Modul Bonding Status

Peter Schleper
Tracker Meeting
April 2004

A	B	C	D	E	F	G
Modulnumber	Modul Type	Gantry	Comments	Bonds done	ARC Fast Test	ARC-Test
30200020032001	1N	Lyon	Bonds on Hybrid bend, short (optical), Ceramic-strip upside down	HV-Bonds	passed	IV-Curve OK
30200020032002	1N	Lyon	Ceramic-strip upside down	HV-Bonds	passed	IV-Curve OK
30200020032003	1S	Lyon	Ceramic-strip upside down	HV-Bonds	passed	IV-Curve OK
30200020032004	1S	Lyon	Ceramic-strip upside down	HV-Bonds	passed	IV-Curve OK
30200020032013	1N	Lyon	Ceramic-strip glued askew	All-Bonds	passed	passed
30200020032014	1N	Lyon	Ceramic-strip glued askew	All-Bonds	passed	passed
30200020032015	1N	Lyon	Ceramic-strip glued askew	All-Bonds	failed, 222 noisy channels	IV-Curve OK
30200020032018	1N	Lyon	Ceramic-strip glued askew	All-Bonds	passed	passed
30200020032019	1S	Lyon	Ceramic-strip glued askew, Bonds on Hybrid bend, Scratch across 8 Bondpads, Sensor and PA glued	All-Bonds	passed	passed
30200020032020	1S	Lyon	Ceramic-strip glued askew	All-Bonds	passed	passed
30200020032021	1S	Lyon	Ceramic-strip glued askew	All-Bonds	passed	passed
30200020032022	1S	Lyon	Ceramic-strip glued askew	All-Bonds	passed	passed
30200020032005	3	Lyon		All-Bonds	passed	passed
30200020032006	3	Lyon		All-Bonds	passed	passed
30200020032007	3	Lyon	Sensor-center dirty	All-Bonds	passed	passed
30200020032008	3	Lyon	Scratch on Sensor	All-Bonds	Passed	passed
30200020032009	3	Lyon	Bonds on Hybrid bend	All-Bonds	failed, Low-Voltage-Control	IV-Curve OK
30200020032010	3	Lyon		All-Bonds	passed	passed
30200020032011	3	Lyon		All-Bonds	passed	passed
30200020027042	3	Brussels	small scratch on backplane	none	passed	none
30200020027043	3	Brussels	small scratch on backplane	none	passed	none
30200020027044	3	Brussels	small scratch on backplane	none	passed	none
30200020027045	3	Brussels	small scratch on backplane (always at same spot)	none	passed	none

Old frames,
Ceramics upside/down
Needs different tools

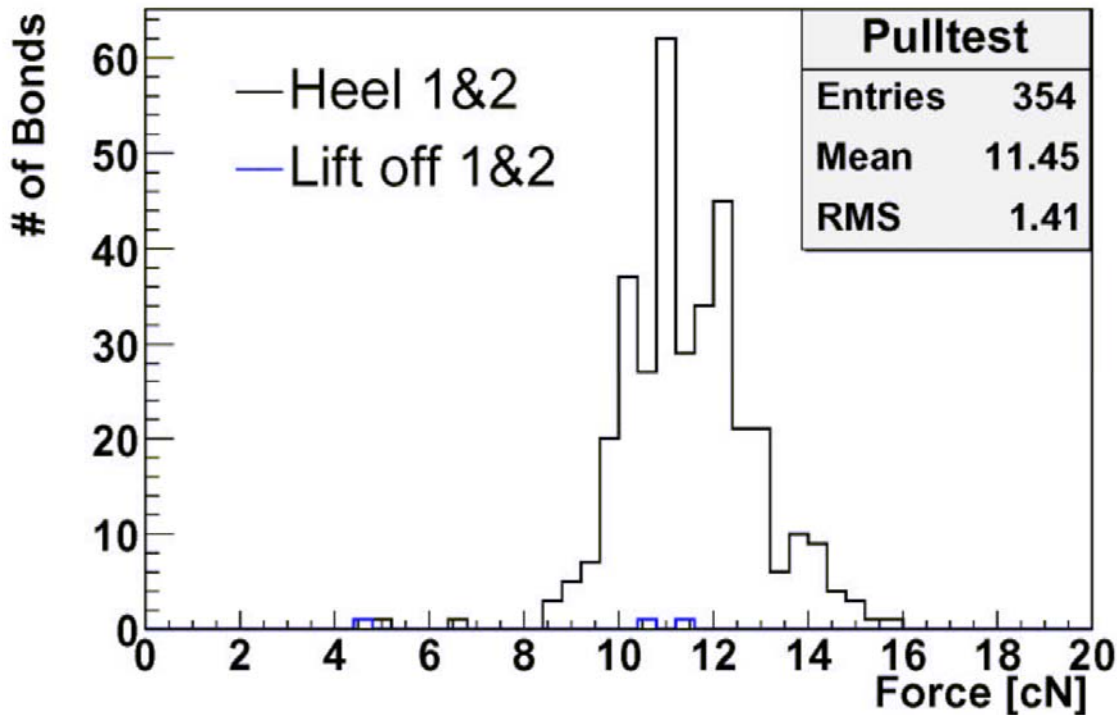
Lyon modules,
Ceramics o.k.,
Glue added by hand
Bonded and tested
2 modules damaged
13 modules o.k.

First modules from
Brussels, o.k. at first loc
To be bonded

Pull tests

Peter Schleper
Tracker Meeting
April 2004

Done on each 50th wire



all recent and old
Modules

→ Bonding process
is stable

In addition: Qualification tests

- Test bonds on PA + pull test
- Pull test of CERN PA bonds
Modules sent to CERN

Conclusion

Peter Schleper
Tracker Meeting
April 2004

Experience from 15 modules:

- Bonding process fine, final version of jigs
- ARC tests o.k. (Version 7.1 ...)
- Database in use

System tests:

Modules sent to Aachen

→ arrived and tested o.k. ?!

Lyon: 1 module is missing (damaged)

→ try to recover module without ceramics

First 4 modules from Brussels just arrived → to be done

→ Ready for production

AOH

Peter Schleper
Tracker Meeting
April 2004

AOHs Inventarliste
Stand 13.04.2004, 14.02 Uhr

CENTER	L2-35	L2-56	L2-70	L2-80	L2-88	L2-100	L3-56	L3-70	L3-80	L3-80	L3-100	L3-110	L3-120	Summe
AACHEN-1	4	2	5	6	5	28	1	2	1	2	2	5	16	79
AACHEN-3B	0	2	5	4	2	0	1	2	1	2	2	0	0	21
ANTWERPEN	5	0	0	0	0	0	0	0	0	0	3	0	0	8
CERN	0	0	0	0	0	0	0	0	0	0	0	0	9	9
COURIER	0	8	14	16	9	0	3	13	6	5	5	10	0	89
HAMBURG-U	44	106	313	329	141	0	54	90	123	10	45	101	4	1360
IC	0	0	0	0	0	0	0	0	0	0	0	0	0	0
KARLSRUHE-IEKP	4	0	0	0	0	3	0	0	0	0	0	0	2	9
LYON	4	4	7	5	5	16	3	4	3	4	4	5	13	77
SANTA-BARBARA	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VIENNA	99	0	0	0	0	1	0	1	2	98	1	11	1	214

- TEC AOH distribution: Vienna -(CERN)-Hamburg → centres
- ~ 1000 AOH are in Hamburg (10% of total)
- few missing types in Aachen and Lyon
- waiting for requests by Petal integration centres