

Test protocol NIKO DENTAL GmbH MR001

Dynamic fatigue testing for endosseous dental implants in accordance with ISO 14801:2007

Implant system	Optimum implants
Manufacturer	NIKO DENTAL GmbH
Type of Implant	REF 1.704
Dimensions [mm]	Ø 3,6 L 13.0 mm
Abutment	Aesthetic Abutment 0° 1-6/6
Dimensions [mm]	0°; 3,6mm; GH1
Screw	J.
Dimensions [mm]	J.

Date of start	23.11.2016
Date of end	13.02.2017
Person / initials	Rausch / <i>R. Rausch</i>
environment temp. [°C]	23 ± 2 °C
Lever arm [mm] (measured)	5,5
Torque screw [Ncm]	20 Ncm

Testing machine	DORA 14801; manufacturer LARADO
Control Unit Nr.	13006
Investment material	Brass cylinder with Weicon Fast-Metal

Test protocol NIKO DENTAL GmbH MR001

Aesthetic Abutment 0° 1-6/6

A. Static loading to fracture

Test sample No.	Failure force [N]	Torque [Ncm]	Date	Failure mode	Test bench ser. no.	Remarks	LOT no. Implant	LOT no. Abutment	LOT no. Screw
1.1	543	298,65	23.11.2016	minimally bent	14024	Stops at 0.8mm away	702395	702470	P-243820160916
1.2	591	325,05	13.02.2017	fracture	14024	Test repeat with 3mm travel limit	702395	702470	P-243820160916
1.3									

Mean value

B. Fatigue testing:

Test sample No.	Testing force [N]	Torque [Ncm]	Cycles achieved	Date from.....	to	Test bench ser. no.	Remarks	LOT no. Implant	LOT no. Abutment	LOT no. Screw
2.1	200	110		23.11.16	27.11.16	14024	reaches 5.000.000, not in Wöhler Diagram	702395	702470	P-243820160916
2.2	240	132	5.000.000	25.11.16	29.11.16	14025		702395	702470	P-243820160916
2.3	280	154	103.428	30.11.16	30.11.16	14024	break abutment and screw, Implant ok	702395	702470	P-243820160916
2.4	260	143	5.000.000	01.12.16	05.12.16	14024		702395	702470	P-243820160916
2.5	260	143	358.480	01.12.16	01.12.16	14025	abutment has cracks, implant breaks in embedding	702395	702470	P-243820160916
2.6	250	137,5	57.770	02.12.16	02.12.16	14026	break abutment and screw, implant with vertical crack	702395	702470	P-243820160916
2.7	250	137,5	447.908	09.12.16	10.12.16	14024	break abutment and screw, Implant ok	702395	702470	P-243820160916
2.8	240	132	118.966	12.12.16	12.12.16	14025	break abutment and screw, Implant ok	702395	702470	P-243820160916
2.9	230	126,5	5.000.000	14.12.16	18.12.16	14025		702395	702470	P-243820160916
2.10	230	126,5	223.459	16.12.16	16.12.16	14024	break abutment and screw, Implant ok	702395	702470	P-243820160916
2.11	220	121	5.000.000	09.01.17	13.01.17	14024		702395	702470	P-243820160916
2.12	220	121	5.000.000	10.01.17	14.01.17	14025		702395	702470	P-243820160916
2.13	220	121	5.000.000	16.01.17	20.01.17	14024		702395	702470	P-243820160916
2.14										
2.15										