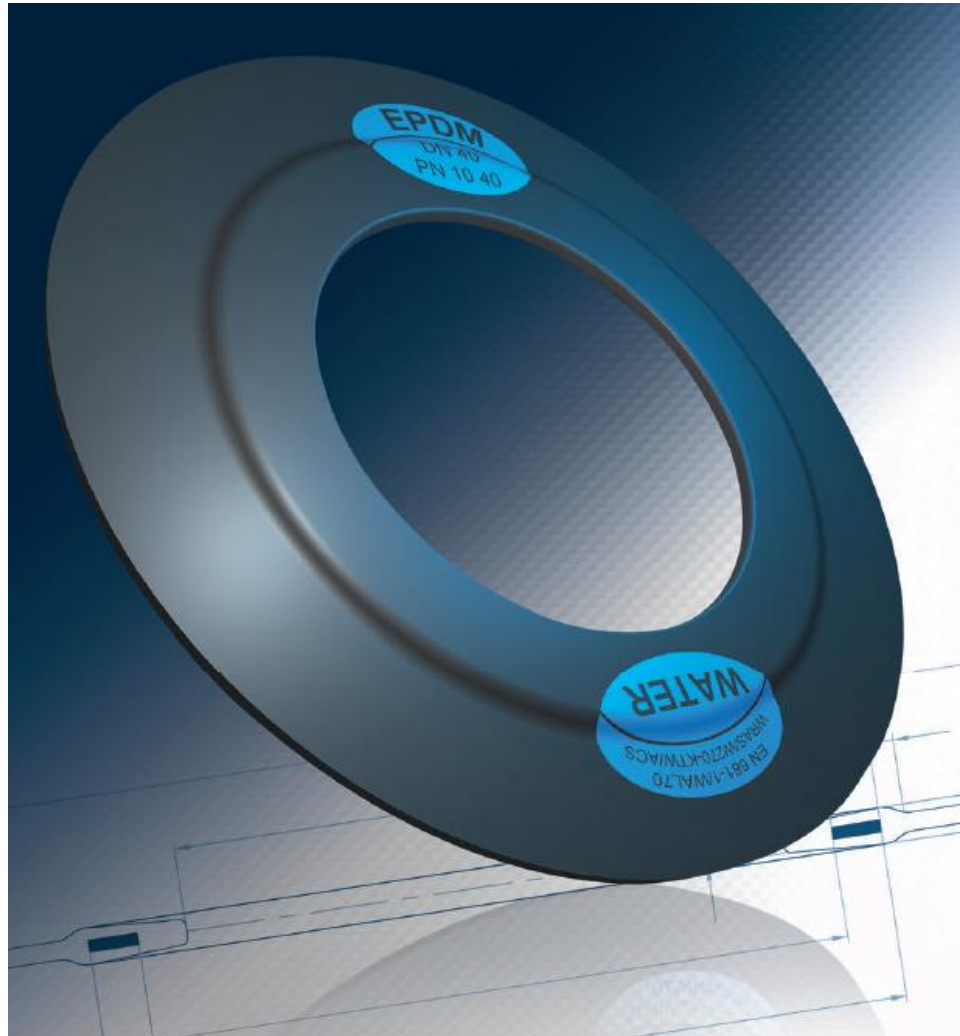


KLINGER KGS GII

Rubber-Steel-Gaskets – the new generation II



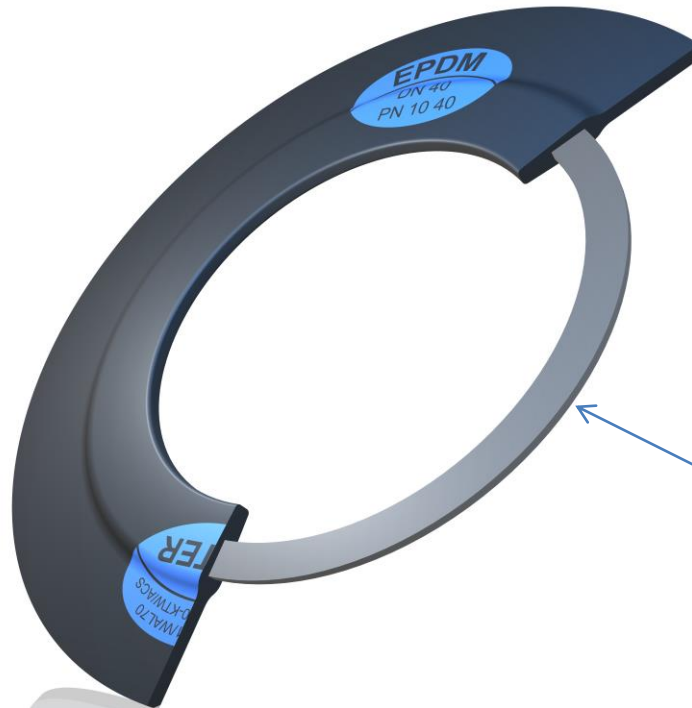
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KLINGER KGS GII

Rubber-Steel-Gaskets – the new generation II



KLINGER KGS GII: Construction



Steel Ring –
made of carbon steel
(S235JR / 1.0037 / St37)

Rubber Profile:
made of elastomers
(NR / CSM / EPDM / NBR / FKM)

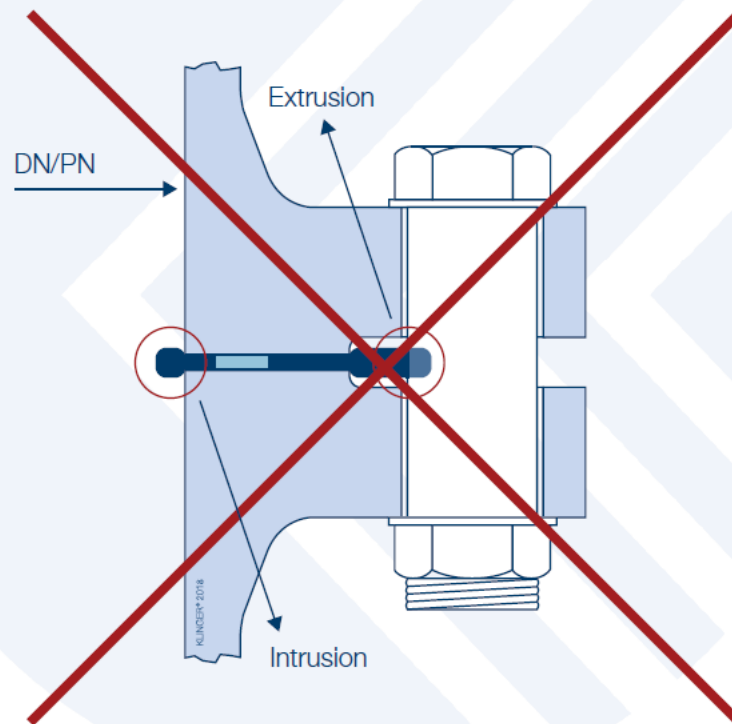
KLINGER KGS GII

Rubber-Steel-Gaskets – the new generation II



KLINGER® KGS GII

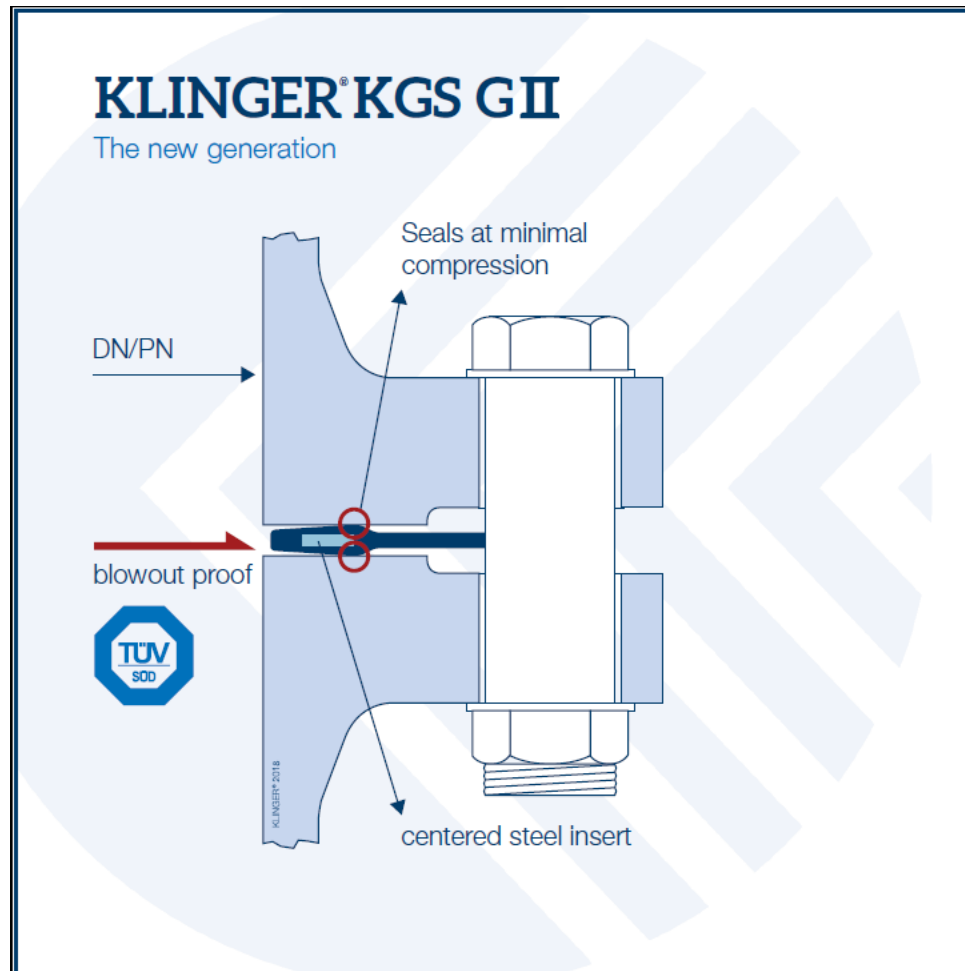
The new generation — no intrusion/ no extrusion



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KLINGER KGS GII

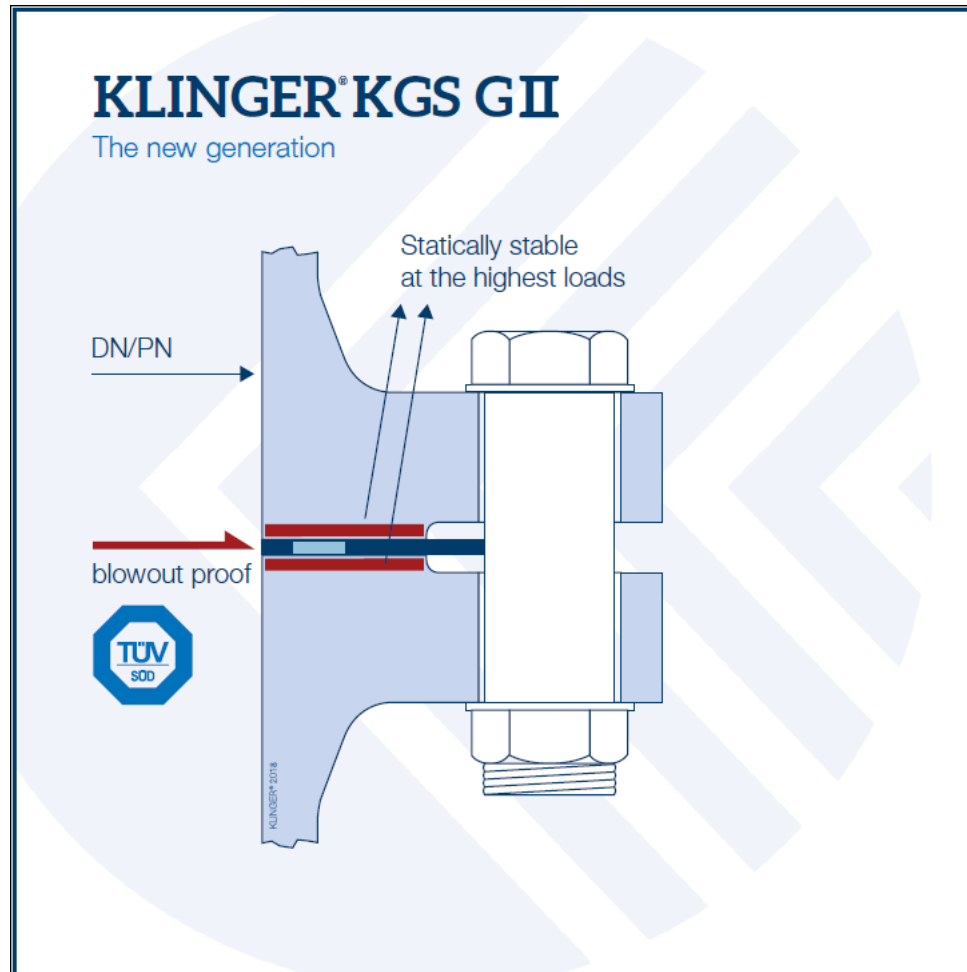
Rubber-Steel-Gaskets – the new generation II



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Rubber-Steel-Gaskets – the new generation II



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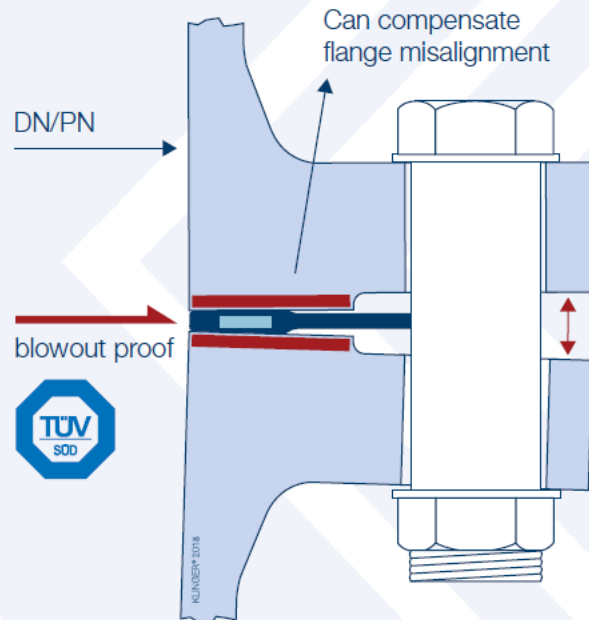
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Rubber-Steel-Gaskets – the new generation II



KLINGER® KGS GII

The new generation



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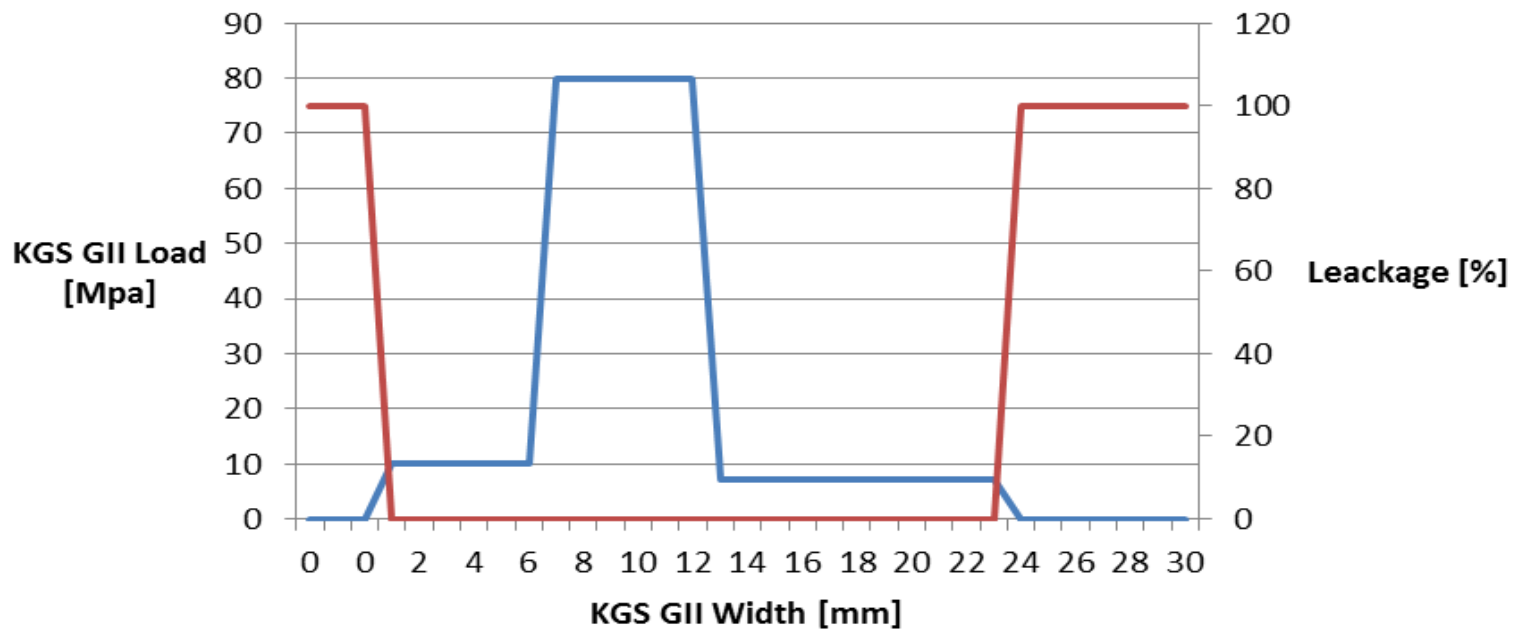
Rubber-Steel-Gaskets – the new generation II



Calculations:



**KGS GII Load-/Leackage-Behavior for DN 100 PN
10-16 (115x162x3 in EPDM)**



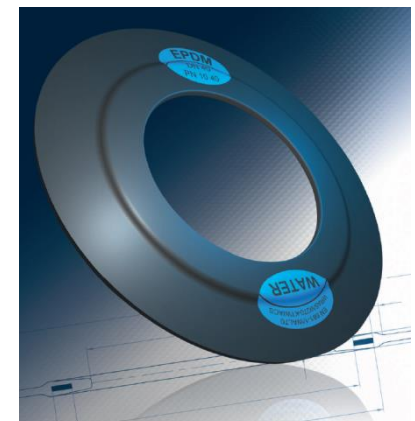
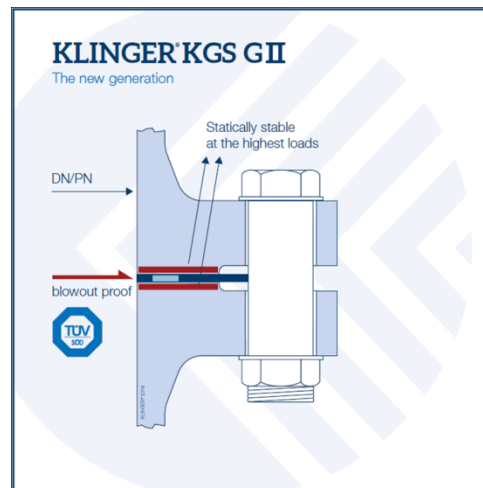
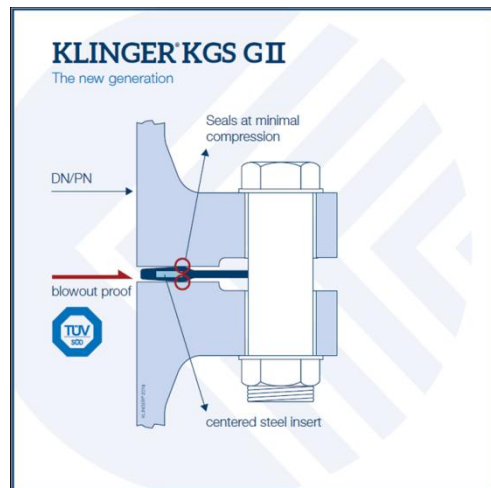
KLINGER KGS GII

Rubber-Steel-Gaskets – the new generation II



Function-Load of Gaskets from min stress to seal to max. stress to seal

DN	KGS GII min. Load [Mpa]	KGS GII max. Load [Mpa]	KGS min. Load [Mpa]	KGS max. Load [Mpa]	RSG-min. Load [Mpa]	RSG-max. Load [Mpa]
50	0,5	80	3	30	5	10
65	0,5	80	3	30	5	10
80	0,5	80	3	30	5	10
100	0,5	80	3	30	5	10
125	0,5	80	3	30	5	10
150	0,5	80	3	30	5	10
200	0,5	80	3	30	5	10
250	0,5	80	3	30	5	10
300	0,5	80	3	30	5	10
350	0,5	80	3	30	5	10
400	0,5	80	3	30	5	10
500	0,5	80	3	30	5	10
600	0,5	80	3	30	5	10
800	0,5	80	3	30	5	10
1000	0,5	80	3	30	5	10



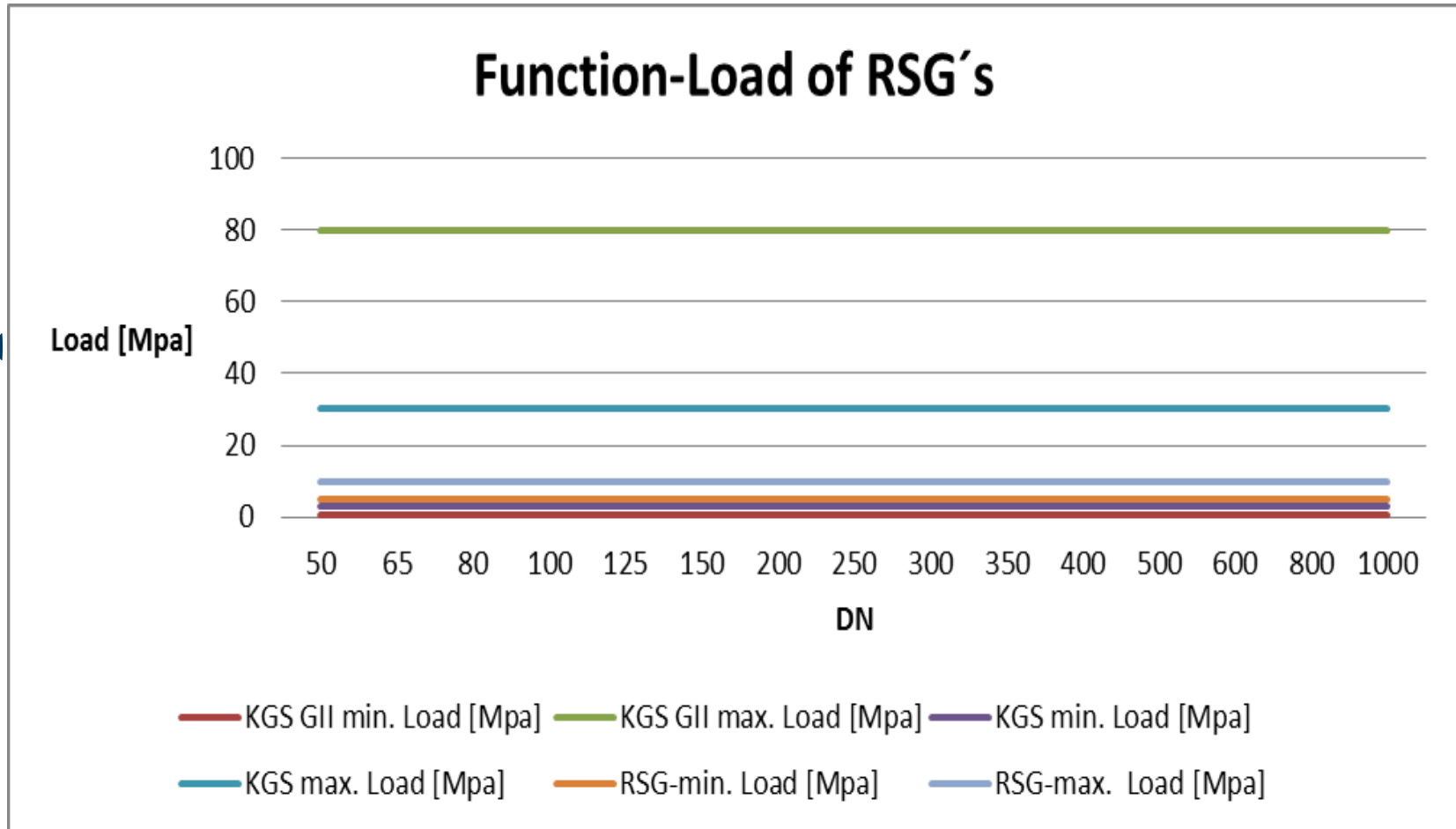
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Rubber-Steel-Gaskets – the new generation II



Function-Load of Gaskets from min stress to seal to max. stress to seal

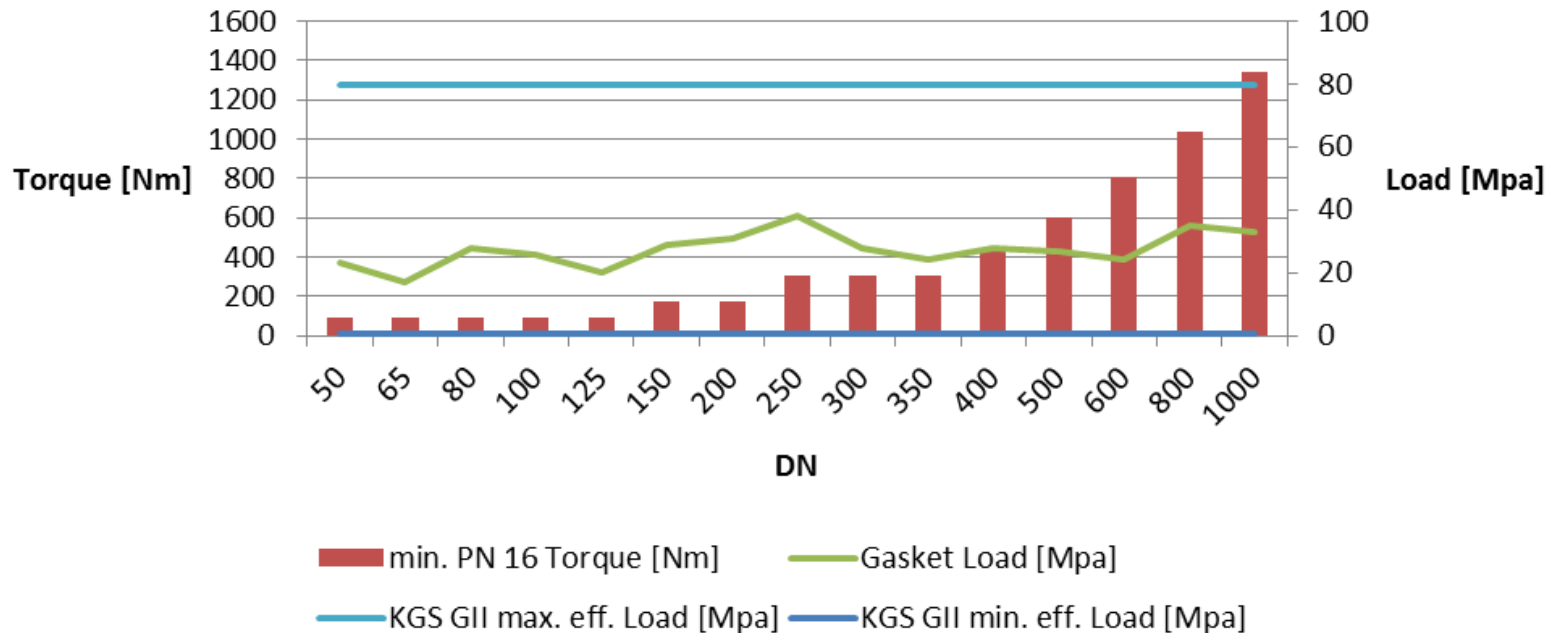


KLINGER KGS GII

Rubber-Steel-Gaskets – the new generation II

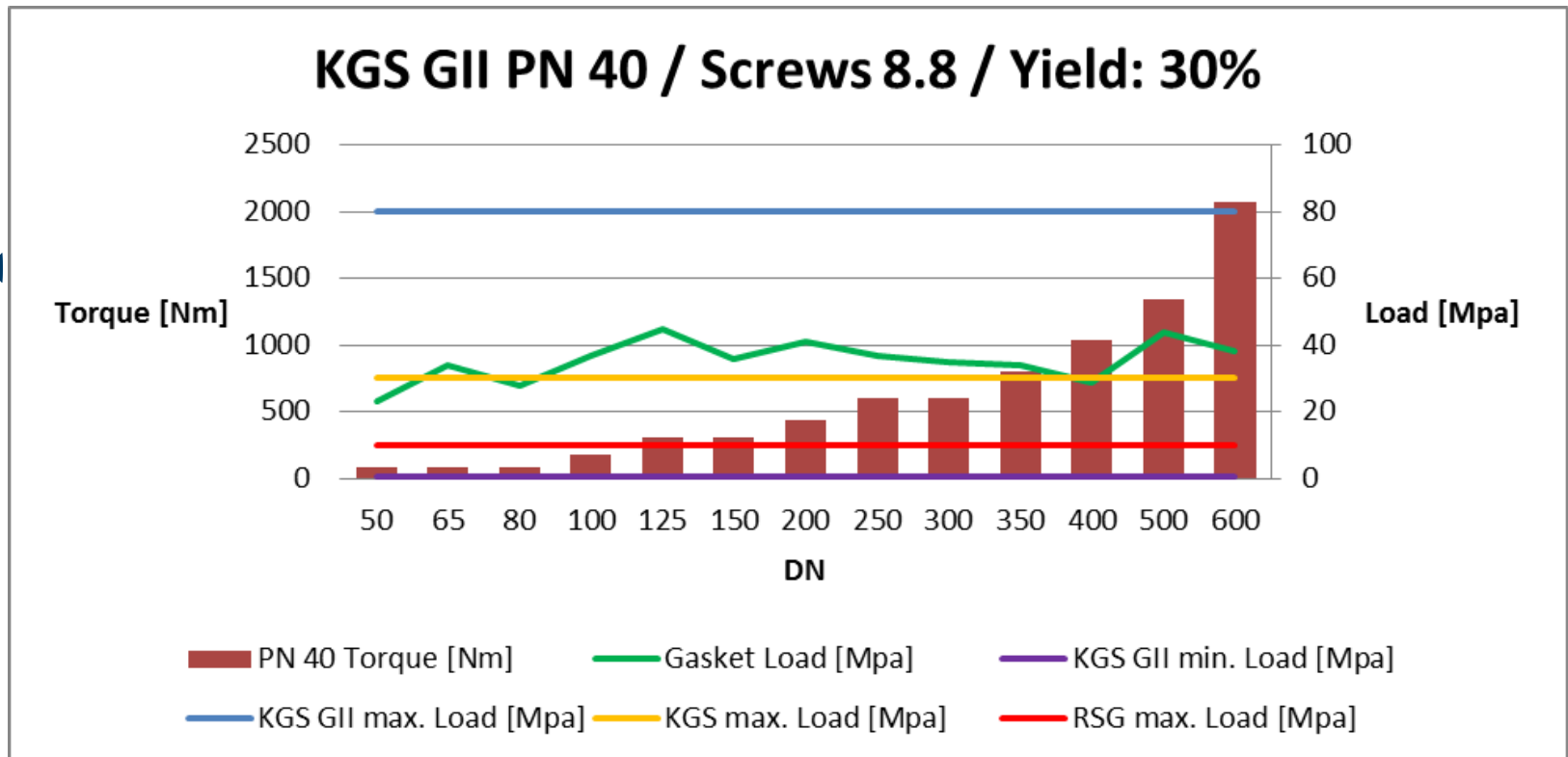


KGS GII PN 16 / Screws 8.8 / Yield: 30%



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Rubber-Steel-Gaskets – the new generation II

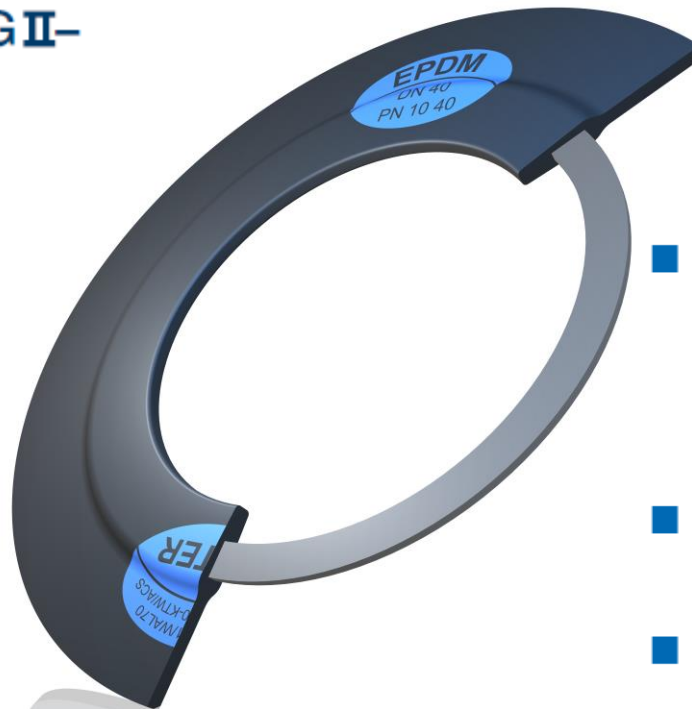


KLINGER KGS GII

Rubber-Steel-Gaskets – the new generation II



KLINGER® KGS GII – the advantages:



- Stable centering of the steel reinforcement in the sealing ring for a homogeneous force distribution and sealing effect in the flange connection
- High load-bearing capacity of the bond between steel ring and rubber
- Safe sealing possible even at the lowest surface pressures
- Very high static loads such as pipe and bolt forces can be absorbed
- No intrusion into the open pipe diameter (DN)

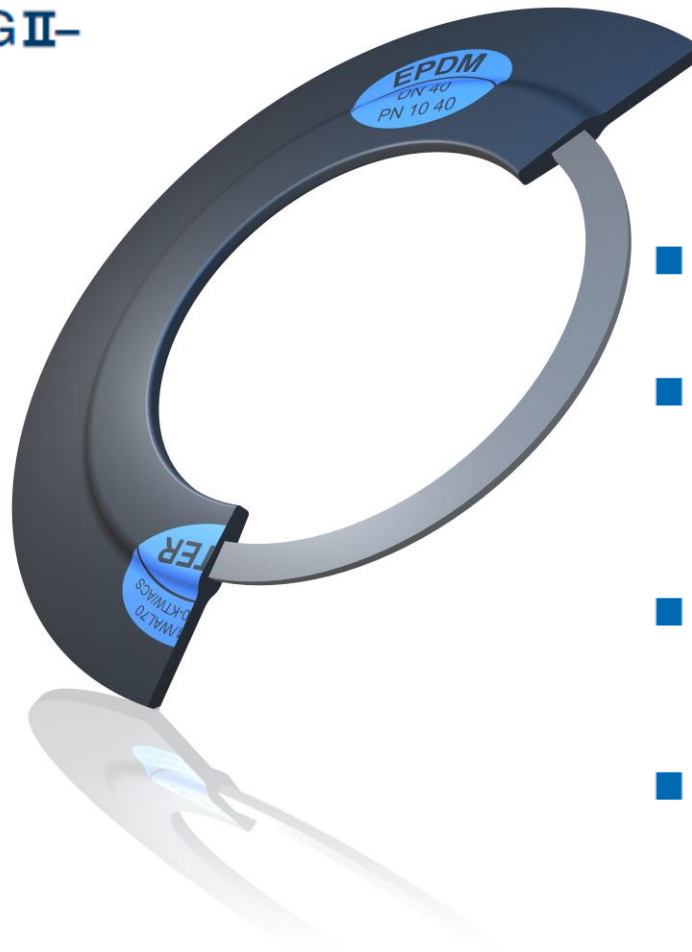
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Rubber-Steel-Gaskets – the new generation II



KLINGER® KGS GII – the advantages:



- No extrusion into the centering area (IBC)
- Highly efficient material usage leads to lower weight (easier handling and lower transport costs)
- Compensation of defects and misalignments of the flange surface possible
- Europapatent No. 3492784

KLINGER KGS GII

Rubber-Steel-Gaskets – the new generation II



KLINGER® KGS GII–
the advantages:



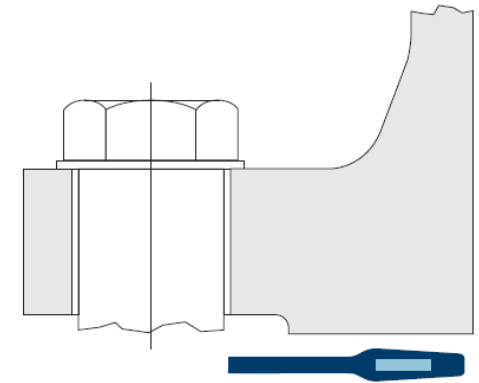
- *Fully certified*
- *Service Gasket*
- *More safety in mounting*
- *TÜV approved*

KLINGER KGS GII

Rubber-Steel-Gaskets – the new generation II



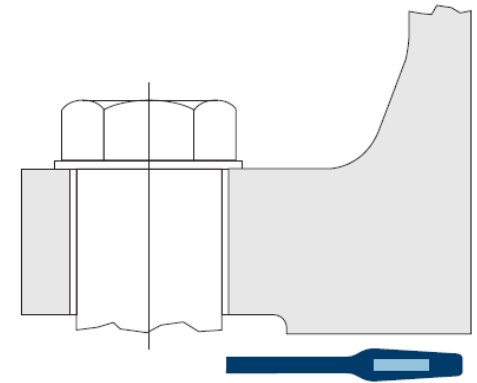
from -15°C to +100°C



Approvals and Certificates:
DVGW-Certificate according to
EN 682 GBL
EN 681-1 WG Class 70
EN 682 GBL Class 70
TA-Luft (Clean Air Act)

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Rubber-Steel-Gaskets – the new generation II



**Approved and
certified for
Hydrogen!**

TÜV SÜD Industrie Service GmbH
Institut für Kunststoffe

A blue ink signature of i. A. Schweizer, written over a circular stamp that contains the TÜV SÜD logo.

Industrie Service

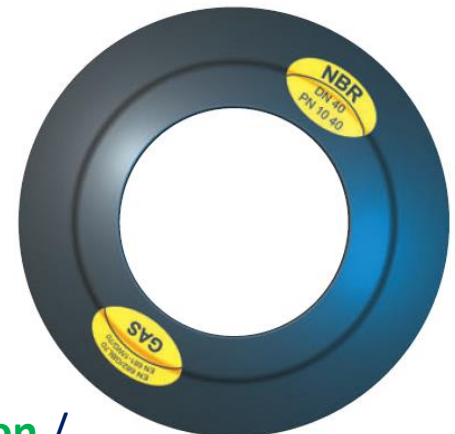
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Markets / Applications:



Infrastructure Gas / Methane / Carbo-Hydrogens /
**Mixtures of Hydrogen and Methane at any Concentration /
pure (100 %) Hydrogen**

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Rubber-Steel-Gaskets – the new generation II



Markets / Applications:



Oilindustry and Petrochemistry



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Rubber-Steel-Gaskets – the new generation II



Markets / Applications:



Waste Water Processes



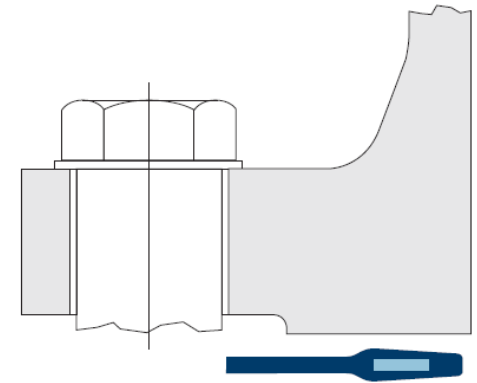
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Rubber-Steel-Gaskets – the new generation II



from -40°C to +110°C,
short-term up to +130°C



Approvals and Certificates:

EN 681-1 WA

UBA ELASTOM

DVGW W270 microbiol. Growth

ACS, WRAS (BS6920-1 : 2000)

TA-Luft (Clean Air Act)

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Markets / Applications:



Drinking Water



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Markets / Applications:



Process Water / acidic or alkaline pH /
dissolved Ozone



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Markets / Applications:



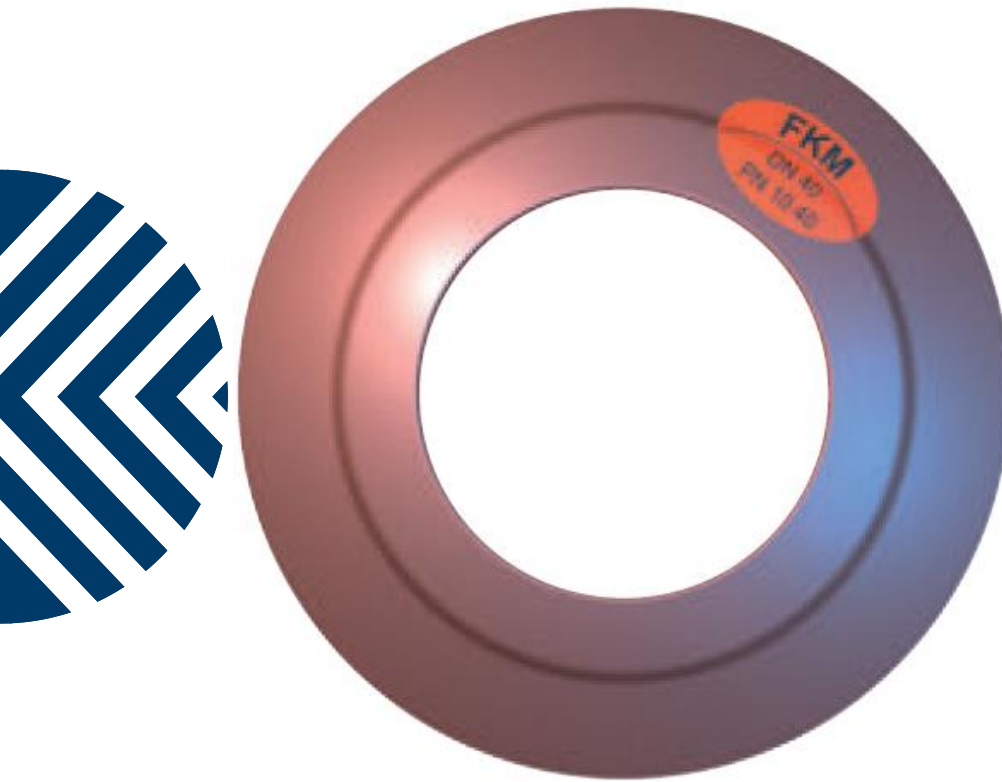
Cooling Water Processes



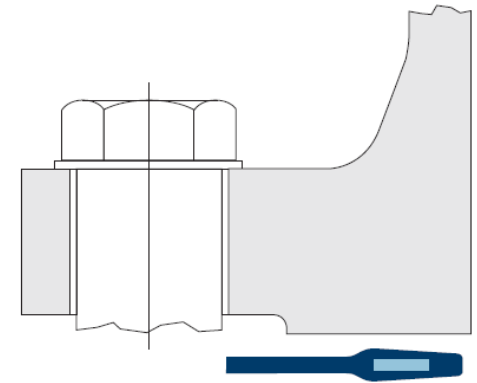
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BU-Manager Elastomer Products

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Rubber-Steel-Gaskets – the new generation II



from -20°C to +200°C



Approvals and Certificates:

TA-Luft (Clean-Air-Act)

EN 10204 Certificates

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Rubber-Steel-Gaskets – the new generation II



Markets / Applications:



Toxical Chemicals / Railway – tank wagon



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Rubber-Steel-Gaskets – the new generation II



Markets / Applications:



Chemical Industry / aggressive Chemicals



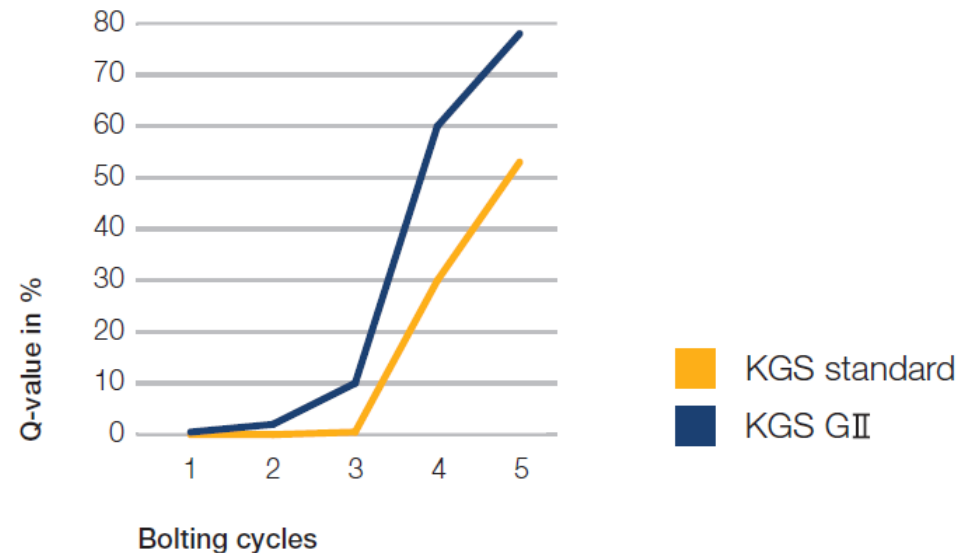
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Factor of mounting quality Q:

To evaluate the characteristics of the new development KGS GII regarding assembly, the behaviour of gasket assembly in comparison to the standard version KGS has been checked by using the test stand FM20 of the company GAIST.

To obtain a quick evaluation of the assembly quality with the test stand the Q-factor is used. It is the product of bolt force target divided by the effective bolt force, difference of the minimum and maximum forces of the individual bolts and the standard deviation to bolt force target.

Comparison Q-Factor:



>> The quality gain after five bolting cycles can be clearly recognised in the diagram

KLINGER KGS GII

Rubber-Steel-Gaskets – the new generation II



Certified and approved to be BLOW-OUT-PROOF at a pressure of 100 bar Class „C“!

means highest classification and tightness at a gasket load of 4 Mpa only!

BESCHENICUNG • ATTESTATION • 证明书 • CBM/ET/ECTBO • CONSTANCIA • ATTESTAZIONE


Industrie Service

Bescheinigung


Klinger GmbH
Richard-Klinger-Str. 37
65510 Idstein

Bescheinigung Nr. IS-ANS-MUC-1712-48185-002

Das Unternehmen erhält mit dieser Bescheinigung entsprechend dem dargestellten Untersuchungsbericht mit der A.Nr. 2773829-2 das Recht, sein nachfolgend beschriebenes Produkt mit dem abgebildeten Protokoll der Zertifizierungsstelle zu kennzeichnen.

Das Produkt erfüllt die Anforderungen:

- TA Luft (Leakagemessung) gemäß VDI 2440, Ausgabe November 2009
- Abgasgrenzwert / Auslegung der Gummigaskets auf 100 Stunden

Das Produkt erfüllt die Anforderungen bezüglich der Bescheinigung gemäß Ziffer 5.2.6.4 der „Technischen Anleitung Luft“ (TA Luft) / VDI 2440 gemäß Ziffer 5.3.1.3 hinsichtlich Dichtwert bzw. der Erhaltung der spezifischen Leckrate nach TA Luft p. 9.1 x 10⁻⁶ mbar x (h x m³) und einer erweiterten Prüfung unter u. g. Betriebsbedingungen.

Zusätzlich beinhaltet das Zertifikat den Eigenschaftsnachweis unter Abertung als Alternative z.B. zu Halbleitungen, Klemmverbindungen, Spritzschweißungen usw.

Produktbeschreibung:

Klinger® KGS GII ist in folgender Güteklasse:

- Elgipen-Preppen (Elastische Gaskets) (EPDM)

Werkstoffeigenschaften, Spezifikationen in der Schweißanordnung, gekennzeichnet durch ein altes Dichtungsprofil und anschließender statischer Reserve.

Einbauelemente und zentraler Steigung zur Stabilisierung, Außendurchmesser selbstbestimmt an den Innendurchmesser der Schraubbohrung (ID).

Diese Bescheinigung ist gültig bis Dezember 2020.

München, den 07. Dezember 2017

TÜV SÜD Industrie Service GmbH
Institut für Kunststoff


J. A. Schneider



TÜV®

TÜV-QUALITY APPROVED

The German institute TÜV SÜD performed tests of the gasket in the size DN 40 PN 40 at a pressure up to 100 bar regarding the leakage, blow-out and ageing behaviour—the gasket passed with flying colours!



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Dipl. Ing.(FH)
BU-Manager Elastomer Products

KLINGER KGS GII

Rubber-Steel-Gaskets – the new generation II



KLINGER KGS GII

the answer for



- **INNOVATION**
- **HIGH GRADE ENGINEERING**
- **ENVIRONMENT SAFETY**
- **TOTAL REDUCING OF COSTS OF OWNERSHIP**

KLINGER KGS GII

Rubber-Steel-Gaskets – the new generation II



KLINGER KGS GII

the answer



COMMITTED

FOR

THE FUTURE!

Robert Steffens
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BU-Manager Elastomer Products 2