DNV·GL

Certificate No:
TAP00001NS

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Expansion Joint for Pipe, Slide Type and Flexible Type

with type designation(s)
Daicoup style 60, 61 and 65

Issued to
Daido Kinzoku Kogyo K.K.
Amagasaki, Hyogo Pref, Japan

is found to comply with
DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems
DNV GL class programme DNVGL-CP-0185 – Type approval – Mechanical joints

Application :

Product(s) approved by this certificate is/are accepted for installation on vessels classed by DNV GL.

Temperature range:	**-20°C to 125°C, depending on material (see limitations)**
Max. working press.:	**See page 3**
Sizes:	**DN40 to DN350 (see page 3)**

Issued at **Høvik** on **2019-06-25**
This Certificate is valid until **2023-12-31**.
DNV GL local station: **Kobe**

for **DNV GL**

Approval Engineer: **Maheshraja Venkatesan**

Zeinab Sharifi
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

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Job Id: **262.1-001061-5**
Certificate No: **TAP00001NS**

Product description

Pipe couplings – Slip type Slip-on joints with following construction:
Slide type with body, sleeve and non-asbestos gland packing.

Materials:

	Style 60	Style 61	Style 65
Body	Carbon steel SC450 JIS-G5101	Nodular cast iron FCD450 JIS-G5502	Carbon steel STPG370 JIS-G3454 (or) STKMA13A JIS-G3445
Sleeve	Stainless steel SUS304		
Sleeve flange	Carbon steel SS400 JIS-G3101		
Gland	Carbon steel SS400 JIS-G3101	Nodular cast iron FCD450 JIS-G5502 (or) Carbon steel SS400 JIS-G3101	Carbon steel SS400 JIS-G3101

Application/Limitation

Slip-on joints covered by this certificate are only allowed for the following class II and class III piping systems:

1) Flammable fluids (flash point ≤ 60°C)
   - Cargo oil lines (4)
   - Crude oil washing lines (4)
   - Vent lines (3)
2) Inert gas
   - Water seal effluent lines
   - Scrubber effluent lines
   - Main lines (2)(4)
   - Distributions lines (4)
3) Flammable fluids (flash point > 60°C)
   - Cargo oil lines (4)
   - Fuel oil lines (2)(3)
   - Lubricating oil lines (2)(3)
   - Hydraulic oil (2)(3)
   - Thermal oil (2)(3)
4) Fresh water
   - Cooling water system (1)
   - Condensate return (1)
   - Non-essential system
5) Sea water
   - Bilge lines (1)
   - Water filled fire extinguishing systems e.g. sprinkler systems (3)
   - Non water filled fire extinguishing systems e.g. foam, drencher systems (3)
   - Fire main (not permanently filled) (3)
   - Ballast system (1)
   - Cooling water system (1)
   - Tank cleaning services
   - Non-essential systems
6) Sanitary/drains/scuppers
   - Deck drains (internal) (6)
   - Sanitary drains
7) Sounding/vent
   - Water tanks/dry spaces
   - Oil tanks (f.p. > 60°C) (2)(3)
8) Miscellaneous
   - Service air (non-essential)
   - Brine
   - Steam (5)

(1) Inside machinery spaces of category A – not allowed.
(2) Not inside machinery spaces of category A or accommodation spaces. May be accepted in other machinery spaces provided the joints are located in easily visible and accessible positions.
(3) Not allowed except in cases where such mechanical joints are installed on exposed open decks, as defined in SOLAS II-2/Reg. 9.2.3.3.2.2(10) and not used for fuel oil lines.
(4) Only in pump rooms and open decks – not allowed
(5) May be used for pipes on deck with a design pressure of 10 bar or less.
(6) Only above bulkhead deck of passenger ships and freeboard deck of cargo ships.

Maximum working pressure [MWP] and sizes covered:

Style	60, 61 & 65		
Type	5K	10K	16K
MWP	5 bar	10 bar	16 bar
Sizes covered	DN40 - 350	DN40 - 350	DN80 - 350

Minimum allowable working temperature is 0°C for joints style 61 made of nodular cast iron FCD 450 (which also shall have a minimum elongation of 12%).

The joints are to be assembled and mounted according to manufacturer's instructions.

Material in contact with seawater shall be properly protected. Surface preparation and coating procedure shall be approved by the society.

Materials chosen for the specific system shall be suitable for the intended medium and environmental conditions.

Type Approval documentation

Tests carried out

Tightness test, burst pressure test, vacuum test

Marking of product

For traceability with this type approval the couplings are at least to be marked with:

- Manufacturer's name or trade mark
- Size & Type designation
- Max. working pressure

Periodical assessment

For retention of the Type Approval, a DNV GL Surveyor shall perform periodical assessment after two years (+/- 90 days) and after 3.5 years (+/- 90 days) to verify that the conditions for the approval are complied with. Reference is made to DNVGL-CP-0338.