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April 25, 2013

ED PATNODE
ADVANCED THERMAL SYSTEMS INC
15 ENTERPRISE DR
LANCASTER NY 14086-9749
US

Service Request Type: BPV-Fitting Registration
Service Request No.: 1081066
Your Reference No.:
Registered to: ADVANCED THERMAL SYSTEMS INC

Dear ED PATNODE,

Technical Standards and Safety Authority (TSSA) is pleased to inform you that your submission has been reviewed and registered as follows:

CRN No.: 0D8420.5R1
Main Design No.: THERMAL PAK TP2 EXPANSION JOINTS & THERMAL PAK FLEXIBLE BALL JOINTS
Expiry Date: 25-Apr-2023

Please be advised that a valid quality control system must be maintained for the fitting registration to remain valid until the expiry date.

Scope: SLIP TYPE EXPANSION JOINTS 1.5" TO 24"; BALL EXPANSION JOINTS 3/4" TO 30". For complete scope and Pressure / temperature ratings, see attachments to Statutory Declaration.

A stamped copy of the approved registration and invoice for engineering services will be mailed to you shortly. Should you have any questions or require further assistance, however, please contact a Customer Service Advisor at 1.877.682.TSSA (8772) or e-mail customerservices@tssa.org. We will be happy to assist you. When contacting TSSA regarding this file, please refer to the Service Request number provided above.

Yours truly,

Kaivan Kia P. Eng., PMP
Mechanical Engineer, BPV
Tel. : 416-734-3457
Fax : 416-231-6183
Email : kkia@tssa.org



TECHNICAL STANDARDS & SAFETY AUTHORITY
 14th Floor, Centre Tower
 3300 Bloor Street West
 Toronto, Ontario
 Canada M8X 2X4

Show facsimile of manufacturer logo or trademark, as it will appear on the space below



STATUTORY DECLARATION

Registration of Fittings

I, Edward Patnode, P.E., President/CEO

(Name and Position, e.g. President, Plant Manager, Chief Engineer)

of Advanced Thermal Systems, Inc

(Name of Manufacturer)

Located at 15 Enterprise Drive, Lancaster, NY 14086

(Plant Address)

800-443-9194

(Telephone No.)

716-681-0228

(Fax No.)

I do solemnly declare that the fittings listed hereunder, which are subject to the **Technical Standards and Safety Act**, Boilers and Pressure Vessels Regulation, comply with all of the requirements of ASTM 01.07

(Title of recognized North American Standard)

which specifies the dimensions, materials of construction, pressure/temperature ratings, identification marking the fittings and service;

or are not covered by the provisions of a recognized North American standard and are therefore manufactured to comply with _____ as supported by the attached data which identifies the dimensions, material of construction, pressure/temperature ratings and the basis for such ratings, the marking of the fitting for identification and service.

I further declare that the manufacture of these fittings is controlled by a quality system meeting the requirements of CSA B51 Annex F which has been verified by the following authority, HSB Global Standards

The items covered by this declaration, for which I seek registration, are category H type fittings. In support of this application, the following information and/or test data are attached as follows:

See attached list of enclosures

(drawings, calculations, test reports, etc.)

Declared before me at 15 Enterprise Drive in the Town of Lancaster
 the 10th day of April AD 2013.

STACY A HOOVER
 NOTARY PUBLIC-STATE OF NEW YORK
 No. 01HO6193159

Qualified in Niagara County

My Commission Expires September 15, 2016

Commissioner for Oaths:

Stacy A Hoover
(Printed name)

Stacy A Hoover
(Signature)

[Signature]
(Signature of Declarer)

FOR OFFICE USE ONLY

To the best of my knowledge and belief, the application meets the requirements of the **Technical Standards and Safety Act**, Boilers and Pressure Vessels Regulation, and CSA Standard B51 and is accepted for registration in Category D.

CRN: OD84205R1

Registered by: K. Kin

Dated: April 25/13

NOTE: This registration expires on April 25/2023

REGISTERED

CRN: OD84205R1

Signed: [Signature]

Date: April 25/13

PV 09553 (06/04) Scope: Per Bulletins: TP2-790C (4 sheets)
 BJ-499 KK 4/25/13



Advanced Thermal Systems, Inc.
 15 Enterprise Drive - Lancaster, NY 14086
 Phone: (716) 681-1800 - Fax: (716) 681-0228

Bulletin BJ 499
 Thermal Pak Ball Joint

THIS IS PART OF
 CRN OD 8420.5 P1
 Technical Standards & Safety Authority
 Boilers & Pressure Vessels
 Safety Program

Series	Size	ASME Standard	Pressure Class		STD Wall (Actual)	ASME/ASTM Material
			650 deg F	800 deg F		
P2 & S2	3/4"	B31.1	1600	1150	0.113	A106 or equivalent
P2 & S2	1"	B31.1	1600	1150	0.133	A106 or equivalent
P2 & S2	1-1/4"	B31.1	1500	1050	0.140	A106 or equivalent
P2 & S2	1-1/2"	B31.1	1500	1050	0.145	A106 or equivalent
P2 & S2	2"	B31.1	1200	850	0.154	A106 or equivalent
P2 & S2	2-1/2"	B31.1	1200	850	0.154	A106 or equivalent
P2 & S2	3"	B31.1	1200	850	0.216	A106 or equivalent
P2 & S2	4"	B31.1	1000	740	0.237	A106 or equivalent
P2 & S2	5"	B31.1	1000	740	0.237	A106 or equivalent
P2 & S2	6"	B31.1	975	720	0.280	A106 or equivalent
P2 & S2	8"	B31.1	750	550	0.322	A106 or equivalent
P2 & S2	10"	B31.1	750	550	0.365	A106 or equivalent
P2 & S2	12"	B31.1	600	440	0.375	A106 or equivalent
P2 & S2	14"	B31.1	600	440	0.375	A106 or equivalent
P2 & S2	16"	B31.1	600	440	0.375	A106 or equivalent
P2 & S2	18"	B31.1	500	440	0.375	A106 or equivalent
P2 & S2	20"	B31.1	450	400	0.375	A106 or equivalent
P2 & S2	24"	B31.1	450	400	0.375	A106 or equivalent
P2 & S2	30"	B31.1	450	350	0.375	A106 or equivalent



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 email: edpatnode@advancedthermal.net

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 CRN 0D84205R
 Technical Standards & Safety Authority
 Boilers & Pressure Vessels
 Safety Program

4 sheets.

Bulletin TP2-790
 Thermal Pak TP2 Expansion Joint

Model No.	Size	ASME Standard	Pressure Class 650 deg F	STD Wall (Actual)	ASME/ASTM Material
TP2W-121	1-1/2"	B31.1	150	0.145	A53 Grade B Seamless or equivalent
TP2W-121	2"	B31.1	150	0.154	A53 Grade B Seamless or equivalent
TP2W-121	2-1/2"	B31.1	150	0.203	A53 Grade B Seamless or equivalent
TP2W-121	3"	B31.1	150	0.216	A53 Grade B Seamless or equivalent
TP2W-121	4"	B31.1	150	0.237	A53 Grade B Seamless or equivalent
TP2W-121	5"	B31.1	150	0.258	A53 Grade B Seamless or equivalent
TP2W-121	6"	B31.1	150	0.280	A53 Grade B Seamless or equivalent
TP2W-121	8"	B31.1	150	0.322	A53 Grade B Seamless or equivalent
TP2W-121	10"	B31.1	150	0.365	A53 Grade B Seamless or equivalent
TP2W-121	12"	B31.1	150	0.375	A53 Grade B Seamless or equivalent
TP2W-121	14"	B31.1	150	0.375	A53 Grade B Seamless or equivalent
TP2W-121	16"	B31.1	150	0.375	A53 Grade B Seamless or equivalent
TP2W-121	18"	B31.1	150	0.375	A53 Grade B Seamless or equivalent
TP2W-121	20"	B31.1	150	0.375	A53 Grade B Seamless or equivalent
TP2W-121	24"	B31.1	150	0.375	A53 Grade B Seamless or equivalent



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Bulletin TP2-790
 Thermal Pak TP2 Expansion Joint

Model No.	Size	ASME Standard	Pressure Class 650 deg F	STD Wall (Actual)	ASME/ASTM Material
TP2W-122	1-1/2"	B31.1	150	0.145	A53 Grade B Seamless or equivalent
TP2W-122	2"	B31.1	150	0.154	A53 Grade B Seamless or equivalent
TP2W-122	2-1/2"	B31.1	150	0.203	A53 Grade B Seamless or equivalent
TP2W-122	3"	B31.1	150	0.216	A53 Grade B Seamless or equivalent
TP2W-122	4"	B31.1	150	0.237	A53 Grade B Seamless or equivalent
TP2W-122	5"	B31.1	150	0.258	A53 Grade B Seamless or equivalent
TP2W-122	6"	B31.1	150	0.280	A53 Grade B Seamless or equivalent
TP2W-122	8"	B31.1	150	0.322	A53 Grade B Seamless or equivalent
TP2W-122	10"	B31.1	150	0.365	A53 Grade B Seamless or equivalent
TP2W-122	12"	B31.1	150	0.375	A53 Grade B Seamless or equivalent
TP2W-122	14"	B31.1	150	0.375	A53 Grade B Seamless or equivalent
TP2W-122	16"	B31.1	150	0.375	A53 Grade B Seamless or equivalent
TP2W-122	18"	B31.1	150	0.375	A53 Grade B Seamless or equivalent
TP2W-122	20"	B31.1	150	0.375	A53 Grade B Seamless or equivalent
TP2W-122	24"	B31.1	150	0.375	A53 Grade B Seamless or equivalent



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Bulletin TP2-790
 Thermal Pak TP2 Expansion Joint

Model No.	Size	ASME Standard	Pressure Class 650 deg F	STD Wall (Actual)	ASME/ASTM Material
TP2W-131	1-1/2"	B31.1	300	0.145	A53 Grade B Seamless or equivalent
TP2W-131	2"	B31.1	300	0.154	A53 Grade B Seamless or equivalent
TP2W-131	2-1/2"	B31.1	300	0.203	A53 Grade B Seamless or equivalent
TP2W-131	3"	B31.1	300	0.216	A53 Grade B Seamless or equivalent
TP2W-131	4"	B31.1	300	0.237	A53 Grade B Seamless or equivalent
TP2W-131	5"	B31.1	300	0.258	A53 Grade B Seamless or equivalent
TP2W-131	6"	B31.1	300	0.280	A53 Grade B Seamless or equivalent
TP2W-131	8"	B31.1	300	0.322	A53 Grade B Seamless or equivalent
TP2W-131	10"	B31.1	300	0.365	A53 Grade B Seamless or equivalent
TP2W-131	12"	B31.1	300	0.375	A53 Grade B Seamless or equivalent
TP2W-131	14"	B31.1	300	0.375	A53 Grade B Seamless or equivalent
TP2W-131	16"	B31.1	300	0.375	A53 Grade B Seamless or equivalent
TP2W-131	18"	B31.1	300	0.375	A53 Grade B Seamless or equivalent
TP2W-131	20"	B31.1	300	0.375	A53 Grade B Seamless or equivalent
TP2W-131	24"	B31.1	300	0.375	A53 Grade B Seamless or equivalent



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Bulletin TP2-790
 Thermal Pak TP2 Expansion Joint

Model No.	Size	ASME Standard	Pressure Class 650 deg F	STD Wall (Actual)	ASME/ASTM Material
TP2W-132	1-1/2"	B31.1	300	0.145	A53 Grade B Seamless or equivalent
TP2W-132	2"	B31.1	300	0.154	A53 Grade B Seamless or equivalent
TP2W-132	2-1/2"	B31.1	300	0.203	A53 Grade B Seamless or equivalent
TP2W-132	3"	B31.1	300	0.216	A53 Grade B Seamless or equivalent
TP2W-132	4"	B31.1	300	0.237	A53 Grade B Seamless or equivalent
TP2W-132	5"	B31.1	300	0.258	A53 Grade B Seamless or equivalent
TP2W-132	6"	B31.1	300	0.280	A53 Grade B Seamless or equivalent
TP2W-132	8"	B31.1	300	0.322	A53 Grade B Seamless or equivalent
TP2W-132	10"	B31.1	300	0.365	A53 Grade B Seamless or equivalent
TP2W-132	12"	B31.1	300	0.375	A53 Grade B Seamless or equivalent
TP2W-132	14"	B31.1	300	0.375	A53 Grade B Seamless or equivalent
TP2W-132	16"	B31.1	300	0.375	A53 Grade B Seamless or equivalent
TP2W-132	18"	B31.1	300	0.375	A53 Grade B Seamless or equivalent
TP2W-132	20"	B31.1	300	0.375	A53 Grade B Seamless or equivalent
TP2W-121	24"	B31.1	300	0.375	A53 Grade B Seamless or equivalent