



Our Ref.: NT/103666/18-07

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 Report No: BFTT/RT-05/18

RADIOGRAPHIC EXAMINATION REPORT

Client and Testing Particulars

Client :	Bukit Fraser Thermal Technology Sdn Bhd	Procedure No:	NT/RT/ASME Rev 6.0
Project :	Asean Bintulu Fertiliser Provision For Supply Of New Heat Exchanger -81- A001-E04	IQI type :	ASTM 1B
Job No:	BFTT 17-646	Film Manufacturer/Type :	FUJI 100/class II
Material:	SA 106 GR.B / SA 105N	Density :	2.0 - 4.0
Welding Process :	GTAW	Sensitivity:	0.33mm(5 wires visible)
Examination Code :	ASME V	Source to Object Distance :	400mm
Acceptance Code:	ASME Sect. VIII Div.1 2015 Ed.	Source Side of Object to Film Distance:	(33.4)mm
Examination Date:	08 May 2018	No of Radiograph(exposure) :	Single Exposure
		No. of Film Each Cassette :	1 Film
		Radiographic Technique :	DWDI
		Film Viewing Technique :	Double Wall Viewing
		Source Type/Size :	Iridium192 (3.2mm)
		Location Markers :	Film Side

Radiographic Examination Result

Weld Reference (Welder No)	WT	RT	Pipe Diameter	Material Thickness	Film Position	Film Interpretation	Result	Remarks
	(mm)	(mm)	(mm)	(mm)				
81-A001-E04								
N5 - JT.1 (WN-007)	12.09	3	33.4	9.09	X	NRI	Accept	
					Y	Por	Accept	
					Z	Por	Accept	

End Of Report

Legend:

TI: Tungsten Inclusion	NRI: No Relevant Indication	Uc: Undercut	Por: Porosity	WT: Weld Thickness
SI: Slag Inclusion	LP: Lack of Penetration	Con: Concavity	BT: Burn Through	RT: Reinforcement Thickness
LF: Lack of Fusion	EP: Excess Penetration	AR: Artifact	Sur: Surface	

Personnel Particulars

Radiographer : Emirsham - NDT Lev. II

Interpreted & Evaluated By: Amat Hamidi - NDT Lev. II

Date: 09 May 2018



Client Representative:

Name:
Date:



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 Report No: BFTT/RT-04/18

RADIOGRAPHIC EXAMINATION REPORT

Client and Testing Particulars

Client :	Bukit Fraser Thermal Technology Sdn Bhd	Procedure No:	NT/RT/ASME Rev 6.0
Project :	Asean Bintulu Fertiliser	IQI type :	ASTM 1B
	Provision For Supply Of New Heat Exchanger -81-A001-E04	Film Manufacturer/Type :	FUJI 100/class II
Job No:	BFTT 17-646	Density :	2.0 - 4.0
Material:	SA 106 GR.B / SA 234 WPB	Sensitivity:	0.33mm(5 wires visible)
Welding Process :	GTAW	Source to Object Distance :	400mm
Examination Code :	ASME V	Source Side of Object to Film Distance:	(33.4)mm
Acceptance Code:	ASME Sect. VIII Div.1 2015 Ed.	No of Radiograph(exposure) :	Single Exposure
		No. of Film Each Cassette :	1 Film
Examination Date:	08 May 2018	Radiographic Technique :	DWDI
		Film Viewing Technique :	Double Wall Viewing
		Source Type/Size :	Iridium192 (3.2mm)
		Location Markers :	Film Side

Radiographic Examination Result

Weld Reference (Welder No)	WT	RT	Pipe Diameter	Material Thickness	Film Position	Film Interpretation	Result	Remarks
	(mm)	(mm)	(mm)	(mm)				
81-A001-E04								
N5 - JT.2 (WN-007)	12.09	3	33.4	9.09	X	NRI	Accept	
					Y	NRI	Accept	
					Z	NRI	Accept	

End Of Report

Legend:

TI: Tungsten Inclusion	NRI: No Relevant Indication	Uc: Undercut	Por: Porosity	WT: Weld Thickness
SI: Slag Inclusion	LP: Lack of Penetration	Con: Concavity	BT: Burn Through	RT: Reinforcement Thickness
LF: Lack of Fusion	EP: Excess Penetration	AR: Artifact	Sur: Surface	

Personnel Particulars

Radiographer : Emirsham - NDT Lev. II

Interpreted & Evaluated By: Amat Hamidi - NDT Lev.II

Date: 09 May 2018



Client Representative:

Name:
Date:



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RADIOGRAPHIC EXAMINATION REPORT

Client and Testing Particulars

Client :	Bukit Fraser Thermal Technology Sdn Bhd	Procedure No:	NT/RT/ASME Rev 6.0
Project :	Asean Bintulu Fertiliser Provision For Supply Of New Heat Exchanger -81- A001-E04	IQI type :	ASTM 1B
Job No:	BFTT 17-646	Film Manufacturer/Type :	FUJI 100/class II
Material:	SA 106 GR.B / SA 234 WPB	Density :	2.0 - 4.0
Welding Process :	GTAW	Sensitivity:	0.33mm(5 wires visible)
Examination Code :	ASME V	Source to Object Distance :	400mm
Acceptance Code:	ASME Sect. VIII Div.1 2015 Ed.	Source Side of Object to Film Distance:	(73)mm
Examination Date:	08 May 2018	No of Radiograph(exposure) :	Single Exposure
		No. of Film Each Cassette :	1 Film
		Radiographic Technique :	DWDI
		Film Viewing Technique :	Double Wall Viewing
		Source Type/Size :	Iridium192 (3.2mm)
		Location Markers :	Film Side

Radiographic Examination Result

Weld Reference (Welder No)	WT (mm)	RT (mm)	Pipe Diameter (mm)	Material Thickness (mm)	Film Position	Film Interpretation	Result	Remarks
81-A001-E04								
N2 - JT.2 (WN-009)	12.53	3	73	9.53	X	NRI	Accept	
					Y	NRI	Accept	

End Of Report

Legend:

TI: Tungsten Inclusion	NRI: No Relevant Indication	Uc: Undercut	Por: Porosity	WT: Weld Thickness
SI: Slag Inclusion	LP: Lack of Penetration	Con: Concavity	BT: Burn Through	RT: Reinforcement Thickness
LF: Lack of Fusion	EP: Excess Penetration	AR: Artifact	Sur: Surface	

Personnel Particulars

Radiographer: Emirsham - NDT Lev. II

Interpreted & Evaluated By: Amat Hamidi - NDT Lev.II

Date: 09 May 2018



Client Representative:

Name:
Date:



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RADIOGRAPHIC EXAMINATION REPORT

Client and Testing Particulars

Client :	Bukit Fraser Thermal Technology Sdn Bhd	Procedure No:	NT/RT/ASME Rev 6.0
Project :	Asean Bintulu Fertiliser Provision For Supply Of New Heat Exchanger -81- A001-E04	IQI type :	ASTM 1B
Job No:	BFTT 17-646	Film Manufacturer/Type :	FUJI 100/class II
Material:	SA 106 GR.B / SA 234 WPB	Density :	2.0 - 4.0
Welding Process :	GTAW / SMAW	Sensitivity:	0.33mm(5 wires visible)
Examination Code :	ASME V	Source to Object Distance :	114.3mm
Acceptance Code:	ASME Sect. VIII Div.1 2015 Ed.	Source Side of Object to Film Distance:	(13.49+3)mm
Examination Date:	08 May 2018	No of Radiograph(exposure) :	Single Exposure
		No. of Film Each Cassette :	1 Film
		Radiographic Technique :	DWSI
		Film Viewing Technique :	Single Wall Viewing
		Source Type/Size :	Iridium192 (3.2mm)
		Location Markers :	Film Side

Radiographic Examination Result

Weld Reference (Welder No)	WT (mm)	RT (mm)	Pipe Diameter (mm)	Material Thickness (mm)	Film Position	Film Interpretation	Result	Remarks
81-A001-E04								
N4 - JT.3 (WN-009/216)	16.49	3	114.3	13.49	0 - 1 1 - 2 2 - 0	Por NRI NRI	Accept Accept Accept	

End Of Report

Legend:

TI : Tungsten Inclusion	NRI : No Relevant Indication	Uc : Undercut	Por : Porosity	WT : Weld Thickness
SI : Slag Inclusion	LP : Lack of Penetration	Con : Concavity	BT : Burn Through	RT : Reinforcement Thickness
LF : Lack of Fusion	EP : Excess Penetration	AR : Artifact	Sur : Surface	

Personnel Particulars

Radiographer : Emirsham - NDT Lev. II

Interpreted & Evaluated By: Amat Hamidi - NDT Lev. II

Date: 09 May 2018



Client Representative:

Name:

Date:



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RADIOGRAPHIC EXAMINATION REPORT

Client and Testing Particulars

Client :	Bukit Fraser Thermal Technology Sdn Bhd	Procedure No:	NT/RT/ASME Rev 6.0
Project :	Asean Bintulu Fertiliser Provision For Supply Of New Heat Exchanger -81- A001-E04	IQI type :	ASTM 1B
Job No:	BFTT 17-646	Film Manufacturer/Type :	FUJI 100/class II
Material:	SA 105N / SA 234 WPB	Density :	2.0 - 4.0
Welding Process :	GTAW	Sensitivity:	0.33mm(5 wires visible)
Examination Code :	ASME V	Source to Object Distance :	400mm
Acceptance Code:	ASME Sect. VIII Div.1 2015 Ed.	Source Side of Object to Film Distance:	(73)mm
Examination Date:	08 May 2018	No of Radiograph(exposure) :	Single Exposure
		No. of Film Each Cassette :	1 Film
		Radiographic Technique :	DWDI
		Film Viewing Technique :	Double Wall Viewing
		Source Type/Size :	Iridium192 (3.2mm)
		Location Markers :	Film Side

Radiographic Examination Result

Weld Reference (Welder No)	WT	RT	Pipe Diameter	Material Thickness	Film Position	Film Interpretation	Result	Remarks
	(mm)	(mm)	(mm)	(mm)				
81-A001-E04								
N2 - JT.1 (WN-009)	12.53	3	73	9.53	X	Por		Reject
					Y	NRI		Accept

_____ End Of Report _____

Legend:

TI: Tungsten Inclusion	NRI: No Relevant Indication	Uc: Undercut	Por: Porosity	WT: Weld Thickness
SI: Slag Inclusion	LP: Lack of Penetration	Con: Concavity	BT: Burn Through	RT: Reinforcement Thickness
LF: Lack of Fusion	EP: Excess Penetration	AR: Artifact	Sur: Surface	

Personnel Particulars

Radiographer : Emirsham - NDT Lev. II

Interpreted & Evaluated By: Amat Hamidi - NDT Lev.II

Date: 09 May 2018



Client Representative:

Name:
Date:



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RADIOGRAPHIC EXAMINATION REPORT

Client and Testing Particulars

Client :	Bukit Fraser Thermal Technology Sdn Bhd	Procedure No:	NT/RT/ASME Rev 6.0
Project :	Asean Bintulu Fertiliser Provision For Supply Of New Heat Exchanger -81- A001-E04	IQI type :	ASTM 1B
Job No:	BFTT 17-646	Film Manufacturer/Type :	FUJI 100/class II
Material:	SA 105N / SA 234 WPB	Density :	2.0 - 4.0
Welding Process :	GTAW / SMAW	Sensitivity:	0.33mm(5 wires visible)
Examination Code :	ASME V	Source to Object Distance :	114.3mm
Acceptance Code:	ASME Sect. VIII Div.1 2015 Ed.	Source Side of Object to Film Distance:	(13.49+3)mm
Examination Date:	08 May 2018	No of Radiograph(exposure) :	Single Exposure
		No. of Film Each Cassette :	1 Film
		Radiographic Technique :	DWSI
		Film Viewing Technique :	Single Wall Viewing
		Source Type/Size :	Iridium192 (3.2mm)
		Location Markers :	Film Side

Radiographic Examination Result

Weld Reference (Welder No)	WT (mm)	RT (mm)	Pipe Diameter (mm)	Material Thickness (mm)	Film Position	Film Interpretation	Result	Remarks
81-A001-E04								
N4 - JT.1 (WN-009/216)	16.49	3	114.3	13.49	0 - 1	NRI	Accept	
					1 - 2	NRI	Accept	
					2 - 0	NRI	Accept	

End Of Report

Legend:

TI: Tungsten Inclusion	NRI: No Relevant Indication	Uc: Undercut	Por: Porosity	WT: Weld Thickness
SI: Slag Inclusion	LP: Lack of Penetration	Con: Concavity	BT: Burn Through	RT: Reinforcement Thickness
LF: Lack of Fusion	EP: Excess Penetration	AR: Artifact	Sur: Surface	

Personnel Particulars

Radiographer : Emirsham - NDT Lev. II

Interpreted & Evaluated By: Amal Hamidi - NDT Lev.II

Date: 09 May 2018



Client Representative:

Name:
Date:



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RADIOGRAPHIC EXAMINATION REPORT

Client and Testing Particulars

Client :	Bukit Fraser Thermal Technology Sdn Bhd	Procedure No:	NT/RT/ASME Rev 6.0
Project :	Asean Bintulu Fertiliser	IQI type :	ASTM 1B
Job No:	BFTT 17-646	Film Manufacturer/Type :	FUJI 100/class II
Material:	SA 106 GR.B / SA 105N	Density :	2.0 - 4.0
Welding Process :	GTAW / SMAW	Sensitivity:	0.33mm(5 wires visible)
Examination Code :	ASME V	Source to Object Distance :	114.3mm
Acceptance Code:	ASME Sect. VIII Div.1 2015 Ed.	Source Side of Object to Film Distance:	(13.49+3)mm
Examination Date:	08 May 2018	No of Radiograph(exposure) :	Single Exposure
		No. of Film Each Cassette :	1 Film
		Radiographic Technique :	DWSI
		Film Viewing Technique :	Single Wall Viewing
		Source Type/Size :	Iridium192 (3.2mm)
		Location Markers :	Film Side

Radiographic Examination Result

Weld Reference (Welder No)	WT	RT	Pipe Diameter	Material Thickness	Film Position	Film Interpretation	Result	Remarks
	(mm)	(mm)	(mm)	(mm)				
81-A001-E04								
N3 - JT.1 (WN-009/216)	16.49	3	114.3	13.49	0 - 1	Por	Accept	
					1 - 2	Por	Accept	
					2 - 0	NRI	Accept	

End Of Report

Legend:

TI: Tungsten Inclusion	NRI: No Relevant Indication	Uc: Undercut	Por: Porosity	WT: Weld Thickness
SI: Slag Inclusion	LP: Lack of Penetration	Con: Concavity	BT: Burn Through	RT: Reinforcement Thickness
LF: Lack of Fusion	EP: Excess Penetration	AR: Artifact	Sur: Surface	

Personnel Particulars

Radiographer : Emirsham - NDT Lev. II

Interpreted & Evaluated By: Amat Hamidi - NDT Lev. II

Date: 09 May 2018



Client Representative:

Name:

Date: