OPTIMUS-TDZ

STAINLESS STEEL PIPE & STAINLESS STEEL PRESS-FITTINGS GRADE 304 & 316



OPTIMUS

ENTERPRISE INTRODUCTION

TE DEUM Engineering Pte Ltd was incorporated in Singapore on 15th July 1989 specialising in Marketing M&E products relating to Electrical, Mechanical, Plumbing, Fire Protection and System Integration.

Together with our team of experience and dedicated staffs, we, TE DEUM Engineering have over the years spread our business to reginal markets and strategically positioned ourselves to be One Stop building solution provider to serve the needs of valuable customers with our innovative and competitive products range.

Looking forward to the growth of building industries in this region, we strongly believe our strength and preserverance together with our excellent customer support will meet our company expectations for many more years to come.









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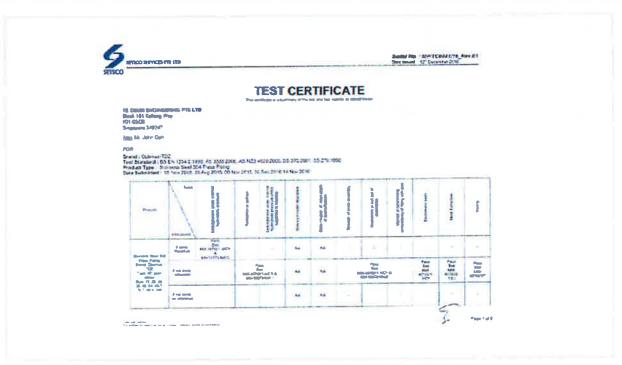
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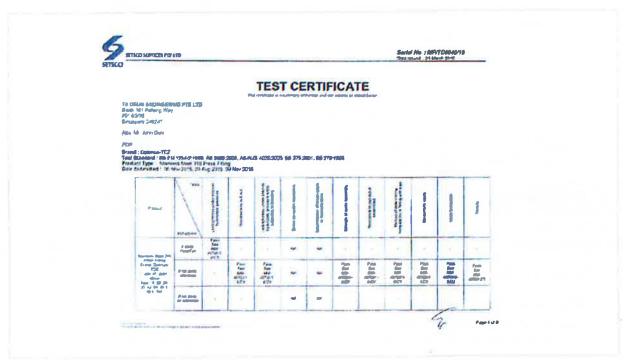
304 Pipe Certificate

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316 Pipe Certificate



304 Fitting Certificate



316 Fitting Certificate



CHARACTERISTIC OF STAINLESS STEEL PRESS-FITTINGS & PIPE



High strength material

Grade 304 & 316 stainless steel pipe has tensile strength ≥520MPa, 2-10 times stronger than ordinary pipe, greatly reduce the possibility of leakage caused by external forces, so that conserve water resources.

Corrosion-resistant, long service life

Stainless steel pipe can react with oxidants to form a thin and dense protective oxide layer. The corrosion resistance is far better than ordinary metal pipes'. The service life is about one hundred years.

Wearproof, temperature resistant, low flow resistance, heavy pressure

The inwall of stainless steel pipe is very smooth, with low flow resistance, wear-resistant, shock resistance, anti-aging, high and low temperature resistant, and can withstand high pressure, which is beyond comparison than other pipe.

Healthy, environment-friendly material can bring clean water

Plastic Pipe: can not with stand high temperature, not suitable for low temperature environment, easy aging, and may disorganize regular hormone secretion.

Galvanized pipe: rust and scale easily, red and black water may sometimes flow out, which cause secondary pollution. Galvanized pipe has been expressly prohibited by our country to be used as domestic water system piping.

Copper pipe: When copper pipe encounter carbon dioxide and sulfur dioxide verdigris will be produced. It is harmful to health. (Mainly composed of copper sulfate and copper carbonate).

Stainless steel pipe: unique performance will not cause secondary pollution on water, no red or green water caused by rusting and scaling, no strange smell, no harmful substance is produced. The water quality is clean and healthy, fully meet the national drinking water quality standards, and the whole pipe network can be 100% recycled.



Easy construction, safe connection

Installing press-fittings is quick and easy. Just use special tool to compress in the correct position after inserting the pipe. It is 4-5 times more efficient than traditional welding method or screw fittings. And the connection part is safe and reliable, so avoid leakage caused by house shock, water hammer quiver, pipe resonance and even earthquake. Therefore, it shortens the construction time and decreases risks.

Suitable for embedded installation, save maintenance worry

Press-fittings meet the requirement of embedded installation. The connection part is so reliable to greatly low down leaking possibility at secluded place. And it will not damage the building wall, so it can reduce risks of maintenance and renovation.

Low comprehensive cost

Financially speaking, Water supply piping construction cost is an extremely small percentage in building construction cost. The initial cost of stainless steel press-fittings and pipe combination project which has reliable and long service life seems 2-2.5 times more expensive than plastic pipe. But actually, it is a one-time expense that is with no further maintenance trouble and almost no maintenance cost. So the comprehensive cost is lower than the cost of any other type of pipe. If correspondents choose inappropriate piping material, the future losses will be ten times more than the initial investment. Such losses include: maintenance cost caused by leakage, property loss etc.

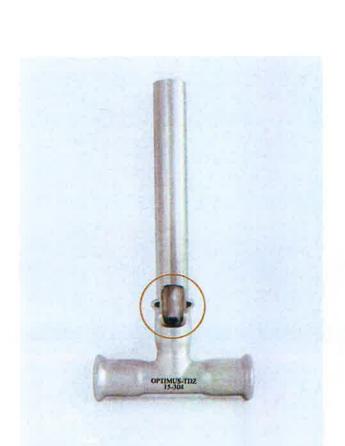


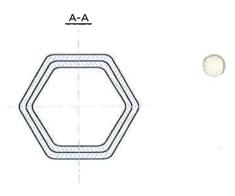
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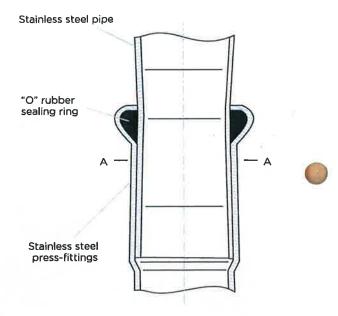
PRINCIPLE AND STRUCTURE OF STAINLESS STEEL PRESS-FITTINGS

Compression-type connection technology existed since the end of 50's last century. It has gradually been widely used around the world, and become one of the standard methods of piping connection.

There is a special rubber sealing ring inside the U shape position of the press-fittings. In installation, insert the stainless steel pipe into the bell mouth till it reaches the positioning stage. Use the special compression tool to tighten one side or both sides of the U-slot and U-groove. The rubber sealing ring will work after squeezed. It plays a role in fixed positioning through shrinking and deforming the compression part of fitting and pipe at the same time (section plane formed a hexagonal shape), so that the stainless steel pipe connections can be achieved effectively.

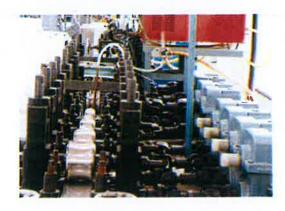


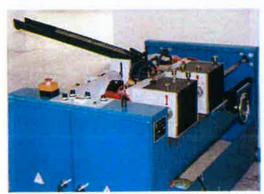


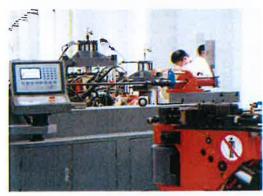


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ADVANCED PRODUCTION FACILITIES



















CRITICAL PRODUCTION PROCESSES



[Gas shielded process]

Under the protection from the gas, nickel and chrome on the surface of stainless steel will not be damaged during welding, and temper color will be removed. It retains stainless steel's original characteristics and corrosion resistance.





[Pickling process/ Solid solution process]

Pickling and solid solution process are all key measures to prevent corrosion of stainless steel material.

Pickling process: Pickling can produce a thin, dense and hard passive film on the inner and outer surface of stainless steel pipe. Passive film is the primary cause to prevent corrosion of stainless steel material.

Solid solution process: For pressure processing workplece, solid solution process can eliminate the work hardening and internal stress caused by distortion, thus to prevent possibility of stress corrosion; For welding workpiece, solid solution process can transform the cylindrical crystal to equiaxed crystal, dissolve carbide in austenite at grain boundary of weld heat-affected zone, so as to prevent the possibility of intergranular corrosion and stress corrosion; For casting workpiece, solid solution process can avoid producing a lot of high-temperature ferrite, thus to prevents adverse effects on performance of austenitic stainless steel.

Fittings with solid solution process is allowed not to do pickling.



"O" RUBBER SEALING RING

Color	Sealing Material	Temperature Scope	Application Field
Black	Ethylene-Propylence- Diene Monomer (EPDM)	-20°C ~ 110°C	Water system: drinking water, running water, hot water
Brown	Viton (FKM)	-30°C ~ 170°C	Steam, high temperature water
Yellow	Nitrile rubber (NBR, HNBR)	-20°C ~ 110°C	Gas, fuel, oil

APPLICATION FIELDS

- DRINKING WATER SYSTEM
- WATER SUPPLY SYSTEM
- **HOT WATER SYSTEM**





REGULAR SPECIFICATION AND MODEL NO. OF STAINLESS STEEL PIPE (GRADE 304 & 316)

Item Code	Item Description	OD	иом
U/TDZ-SSP15*5.75	STAINLESS STEEL PIPE OD 15 MMX5750 MM	15X5.75	LENGTH
U/TDZ-SSP22*5.75	STAINLESS STEEL PIPE OD 22 MMX5750 MM	22X5.75	LENGTH
U/TDZ-SSP28*5.75	STAINLESS STEEL PIPE OD 28 MMX5750 MM	28X5.75	LENGTH
U/TDZ-SSP35*5.75	STAINLESS STEEL PIPE OD 35 MMX5750 MM	35X5.75	LENGTH
U/TDZ-SSP42*5.75	STAINLESS STEEL PIPE OD 42 MMX5750 MM	42X5.75	LENGTH
U/TDZ-SSP54*5,75	STAINLESS STEEL PIPE OD 54 MMX5750 MM	54X5.75	LENGTH
U/TDZ-SSP66.7*5.75	STAINLESS STEEL PIPE OD 66.7 MMX5750 MM	66.7X5.75	LENGTH
U/TDZ-SSP76.1*5.75	STAINLESS STEEL PIPE OD 76.1 MMX5750 MM	76.1X5.75	LENGTH
U/TDZ-SSP88.9*5.75	STAINLESS STEEL PIPE OD 88.9 MMX5750 MM	88.9X5.75	LENGTH
U/TDZ-SSP108*5.75	STAINLESS STEEL PIPE OD 108 MMX5750 MM	108X5.75	LENGTH

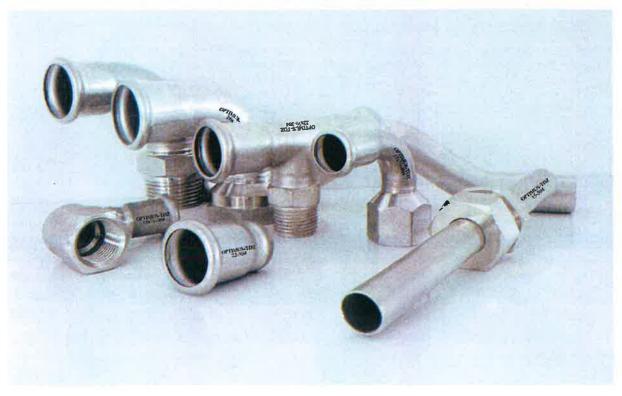


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REGULAR SPECIFICATION AND MODEL NO.OF STAINLESS STEEL PRESS-FITTINGS (GRADE 304 & 316)

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OPTIMUS TDZ PRODUCTS LISTING (GRADE 304 & 316)

(GB/T 19228.1, GB/T 19228.2, refer to BS EN 10312)

GB | Product List (BS EN 10312)

Equal Coupling	C(S)	Item Code	OD	1
		U/TDZ-EC15	15	-
		U/TDZ-EC22	22	5
		U/TDZ-EC28	28	5
		U/TDZ-EC35	35	6
	 	U/TDZ-EC42	42	
-				
The same		U/TDZ-EC54	54	8
A Parket	4 L	U/TDZ-EC66.7	66.7	12
	1.0	U/TDZ-EC76.1	76.1	1.
		U/TDZ-EC108	108	19
Reducing Coupling-B	C(R)-B	Item Code	OD	
	·	U/TDZ-RCB22*15	22x15	
		U/TDZ-RCB28*15	28x15	
		U/TDZ-RCB28*22	28x22	e
orman-ru		U/TDZ-RCB35*15	35x15	
		U/TDZ-RCB35*22	35x22	1
		U/TDZ-RCB35*28	35x28	
		U/TDZ-RCB35 26	42x15	
		U/TDZ-RCB42*22	42x22	
		U/TDZ-RCB42*28	42x28	1
		U/TDZ-RCB42*35	42x35	1
	le le d	U/TDZ-RCB54*15	54x15	1
		U/TDZ-RCB54*22	54x22	1
		U/TDZ-RCB54*28	54x28	1
20	+	U/TDZ-RCB54*35	54x35	
		U/TDZ-RCB54*42	54x42	
		U/TDZ-RCB66.7*28	66.7x28	1
AND DESTRUCTION		U/TDZ-RCB66.7*35	66.7x35	1
		U/TDZ-RCB66.7*42	66.7×42	
		U/TDZ-RCB66.7*54	66.7x54	1
		U/TDZ-RCB76,1*28	76.1×28	i
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		U/TDZ-RCB76.1*42	76.1x42	
		U/TDZ-RCB76.1*54	76.1x54	1.
		U/TDZ-RCB108*42	108x42	1
		U/TDZ-RCB108*54	108x54	1
		U/TDZ-RCB108*66.7	108x66.7	1
		U/TDZ-RCB108*76.1	108x76,1	1
Reducing Coupling-A	C(R)-A	Item Code	OD	
		U/TDZ-RCA22*15	22x15	
		U/TDZ-RCA28*15	28x15	6
		U/TDZ-RCA28*22	28x22	6
		U/TDZ-RCA35*15	35x15	1
		U/TDZ-RCA35*22	35x22	
		U/TDZ-RCA35*28	35x28	
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1000		U/TDZ-RCA42*15	42x15	
4 3		U/TDZ-RCA42*22	42x22	
		U/TDZ-RCA42*28	42x28	9
		U/TDZ-RCA42*35	42×35	1 7

^{*}Sizes from 66.7 onwards is subject to indent basis.



Reducing Coupling-A	C(R)-A	Item Code	OD		L
		U/TDZ-RCA54*15	54x15	5	10
		U/TDZ-RCA54*22	54x2	2	9
		U/TDZ-RCA54*28	54x2	8	11
		U/TDZ-RCA54*35	54x3	5	11
		U/TDZ-RCA54*42	54x42		9
		U/TDZ-RCA66.7*28	66.7x28		12
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STATE OF		U/TDZ-RCA66.7*54	66.7x42 66.7x54		15
1 To 1		U/TDZ-RCA76.1*28	76,1x2		13
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	-	U/TDZ-RCA76.1*42	76.1x4		1
		U/TDZ-RCA76.1*54	76.1x5		14
			108x4		
		U/TDZ-RCA108'42			7.
		U/TDZ-RCA108*54	108x5		19
		U/TDZ-RCA108*66.7	108x66		1
	<u></u>	U/TDZ-RCA108*76.1	108x7	6.1	1:
90° Equal Elbow	90E-A	Item Code	OD		
		U/TDZ-90EE15	15		4
Сотруката	- L	U/TDZ-90EE22	22		
		U/TDZ-90EE28	28		
		U/TDZ-90EE35	35		8
		U/TDZ-90EE42	42		1
		U/TDZ-90EE54	54		1
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		U/TDZ-90EE76.1	76.1		1:
		U/TDZ-90EE108	108		2
					1
90° Reducing Elbow	90RE	Item Code	OD	L	L.
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90° Reducing Elbow		U/TDZ-90RE22*15	54x28	100	•
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	205	U/TDZ-90RE22*15 U/TDZ-90RE28*15 U/TDZ-90RE54*28 Item Code U/TDZ-90PE15	54x28 28x15 22x15 OD	100 71 65 L 49	
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45° Plain Elbow	45E-B	Item Code	OD	L	La
	711373737	U/TDZ-45PE15	15	36	45
	L L	U/TDZ-45PE22	22	42	50
		U/TDZ-45PE28	28	48	53
A TOTAL		U/TDZ-45PE35	35	54	63
	111-1	U/TDZ-45PE42	42	75	78
	- /x/	U/TDZ-45PE54	54	91	94
	VXX	U/TDZ-45PE66.7	66.7	96	99
	~~	U/TDZ-45PE76.1	76.1	123	138
		U/TDZ-45PE108	108	166	183

Equal Tee	T(S)	Item Code	OD	L	н
		U/TDZ-ETI5	15	64	38
		U/TDZ-ET22	22	74	42
		U/TDZ-ET28	28	84	47
-	\-\-\-\-\-\-\-\-\-\-\-\-\-\-\-\-\-\-\-	U/TDZ-ET35	35	100	54
CP110/5-THE		U/TDZ-ET42	42	114	63
State Management of	- 	U/TDZ-ET54	54	138	74
		U/TDZ-ET66.7	66.7	185	95
	L .	U/TDZ-ET76.1	76.1	230	110
		U/TDZ-ET108	108	310	153

Reducing Tee	T(R)	Item Code	OD	L	Н
		U/TDZ-RT22*15	22x15	74	42
		U/TDZ-RT28*15	28x15	84	45
		U/TDZ-RT28*22	28x22	84	45
		U/TDZ-RT35*15	35x15	100	49
		U/TDZ-RT35*22	35x22	100	49
		U/TDZ-RT35*28	35x28	100	51
		U/TDZ-RT42*15	42x15	114	52
		U/TDZ-RT42*22	42x22	114	52
		U/TDZ-RT42*28	42x28	114	54
		U/TDZ-RT42*35	42x35	114	57
		U/TDZ-RT54*15	54x15	138	58
CONT. I		U/TDZ-RT54*22	54x22	138	58
		U/TDZ-RT54°28	54x28	138	61
		U/TDZ-RT54*35	54x35	138	63
-		U/TDZ-RT54*42	54x42	138	69
A COLUMN TWO IS NOT THE OWNER.	الأحراب والمنافق والمراجل	U/TDZ-RT66.7*28	66.7x28	185	70
		U/TDZ-RT66.7*35	66.7x35	185	73
	-	U/TDZ-RT66.7*42	66.7x42	185	75
		U/TDZ-RT66,7*54	66.7x54	185	85
		U/TDZ-RT76.1*22	76.1x22	230	68
		U/TDZ-RT76.1*28	76.1x28	230	70
		U/TDZ-RT76.1*35	76.1x35	230	73
		U/TDZ-RT76.1*42	76.1x42	230	79
		U/TDZ-RT76.1*54	76.1x54	230	84
		U/TDZ-RT108*22	108x22	310	84
		U/TDZ-RT108*28	108x28	310	86
		U/TDZ-RT108*35	108x35	310	89
		U/TDZ-RT108°42	108x42	310	95
		U/TDZ-RT108*54	108x54	310	100
		U/TDZ-RT108*66.7	108x66.7	310	110
		U/TDZ-RT108*76.1	108x76.1	310	126



Pipe Cap	CAP	Item Code	OD	L
		U/TDZ-PC15	15	32
	L L	U/TDZ-PC22	22	34
		U/TDZ-PC28	28	37
1000		U/TDZ-PC35	35	41
1000		U/TDZ-PC42	42	50
TOWN THE PROPERTY OF THE PERSON T	· 	U/TDZ-PC54	54	59
THE STATE OF THE S		U/TDZ-PC66.7	66.7	120
		U/TDZ-PC76.1	76.1	90
		U/TDZ-PC108	108	125

Adjustable Coupling	КС	Item Code	OD	L
		U/TDZ-ACI5	15	80
		U/TDZ-AC22	22	82
4		U/TDZ-AC28	28	91
		U/TDZ-AC35	35	100
Part of the last		U/TDZ-AC42	42	114
		U/TDZ-AC54	54	138
1		U/TDZ-AC66.7	66.7	120
		U/TDZ-AC76.1	76.1	230
		U/TDZ-AC108	108	310

Female Threaded Coupling	ITC ₂	Item Code	OD	L
		U/TDZ-FTC15*RP1/2	15xRp1/2	5
		U/TDZ-FTC15*RP3/4	15xRp3/4	5
		U/TDZ-FTC22*RP1/2	22xRp1/2	5
		U/TDZ-FTC22*RP3/4	22xRp3/4	5
THE REAL PROPERTY AND ADDRESS OF THE PERTY		U/TDZ-FTC22*RP1	22xRp1	(
		U/TDZ-FTC28*RP3/4	28xRp3/4	
pa		U/TDZ-FTC28*RP1	28xRp1	
POST PROPERTY OF THE PROPERTY	++++	U/TDZ-FTC28*RP1-1/4	28xRp1-1/4	(
E CAN		U/TDZ-FTC35*RP1	35xRp1	(
		U/TDZ-FTC35*RP1-1/4	35xRp1-1/4	(
		U/TDZ-FTC35*RP1-1/2	35xRp1-1/2	1
The same of		U/TDZ-FTC42*RP1-1/4	42xRp1-1/4	1
		U/TDZ-FTC42*RP1-1/2	42xRp1-1/2	
		U/TDZ-FTC42*RP2	42xRp2	
		U/TDZ-FTC54*RP1-1/2	54xRp1-1/2	
		U/TDZ-FTC54*RP2	54xRp2	1

Rotatable Coupling	ZL	Item Code	OD	L
		U/TDZ-RC15*G1/2	15xG1/2	46
		U/TDZ-RC15*G3/4	15xG3/4	52
	(777)	U/TDZ-RC22*G3/4	22xG3/4	53
		U/TDZ-RC22*G1	22xG1	53
-3		U/TDZ-RC28*G1	28xG1	58
7		U/TDZ-RC28*G1-1/4	28xG1-1/4	60
(A)		U/TDZ-RC35*G1-1/4	35xG1-1/4	65
		U/TDZ-RC35*G1-1/2	35xG1-1/2	63
STATE OF THE PARTY	-	U/TDZ-RC42*G1-1/2	42xG1-1/2	7
		U/TDZ-RC42*G2	42xG2	7:
		U/TDZ-RC54*G2	54xG2	8



Male Threaded Coupling	ETC	Item Code	OD		
		U/TDZ-MTC15*R1/2	15xR1/	12	5
		U/TDZ-MTC15*R3/4	15xR3/		5
		U/TDZ-MTC22*R1/2	22xR1/		5
		U/TDZ-MTC22*R3/4	22xR3		5
		U/TDZ-MTC22*R1	22xR		6
		U/TDZ-MTC28*R1/2	28xR1/		6
100000		U/TDZ-MTC28*R3/4			
38 S		U/TDZ-MTC28*R3/4	28xR3,		5
55			28xR		6
The second second		U/TDZ-MTC35*R1	35xR		(
and the same of		U/TDZ-MTC35*R1-1/4	35xR1-1	•	(
ALC: NO.		U/TDZ-MTC35*R1-1/2	35xR1-1		6
		U/TDZ-MTC42*R1-1/4	42xR1-1	•	
		U/TDZ-MTC42*R1-1/2	42xR1-1		7
		U/TDZ-MTC54*R1-1/2	54xR1-1	/2	8
		U/TDZ-MTC54°R2	54xR	2	8
		U/TDZ-MTC66.7°R2-1/2	66.7xR2	-1/2	2
		U/TDZ-MTC76.1*R3	76.1xR	3	1.
		U/TDZ-MTC108*R4	108xR	4	1
Female Threaded Elbow	ITCOOF-	Harris Carl			Ι.
remale inreaded Elbow	ITC90E2	Item Code	OD	L	1
	1.4	U/TDZ-FTE15*RP1/2	15xRp1/2	49	1
	- 12	U/TDZ-FTE22*RP1/2	22xRp1/2	61	
ASSAULT.		U/TDZ-FTE22*RP3/4	22xRp3/4	61	6
		U/TDZ-FTE28*RP1	28xRp1	72	-
		U/TDZ-FTE35*RP1-1/2	35xR1-1/2	80	8
		U/TDZ-FTE35*RP1-1/4	35xRp1-1/4	86	8
		U/TDZ-FTE42*RP1-1/2	42xRp1-1/2	112	1
		U/TDZ-FTE54*RP2	54xRp2	138	1;
Based Female Elbow	TC90E₃	Item Code	OD	L	
Dused I ellidie Libott	TC50E3	item code	OD	-	'
	H H1	U/TDZ-BFE15*RP1/2	15xRp1/2	47	2
1,000	1.112				
					Į.
		11/TD7_BEE22*DD3//	22vPn3/4	54	١,
OF THE		U/TDZ-BFE22*RP3/4	22xRp3/4	54	3
Short Female Elbow	ITC90E4	U/TDZ-BFE22*RP3/4	22xRp3/4	54 L	
Short Female Elbow	ITC90E4				
Short Female Elbow	ITC90E4				
Short Female Elbow	ITC90E4	Item Code U/TDZ-SFE15*RP1/2	OD 15xRp1/2	L 50	2
Short Female Elbow	ITC90E4	Item Code	OD	L	2
Short Female Elbow Short Male Elbow	ITC90E4 SME90	Item Code U/TDZ-SFE15*RP1/2	OD 15xRp1/2	L 50	2
		Item Code U/TDZ-SFE15*RP1/2 U/TDZ-SFE22*RP3/4	OD 15xRp1/2 22xRp3/4	L 50	2
		Item Code U/TDZ-SFE15*RP1/2 U/TDZ-SFE22*RP3/4	OD 15xRp1/2 22xRp3/4	L 50	3
		Item Code U/TDZ-SFE15*RP1/2 U/TDZ-SFE22*RP3/4 Item Code	OD 15xRp1/2 22xRp3/4 OD	50 55 L	3
		Item Code U/TDZ-SFE15*RP1/2 U/TDZ-SFE22*RP3/4 Item Code	OD 15xRp1/2 22xRp3/4 OD	50 55 L	3



Male Threaded Elbow	ETC90E	Item Code	OĐ	L	L
		U/TDZ-MTE15*R1/2	15xR1/2	49	4
		U/TDZ-MTE22*R1/2	22xR1/2	61	5
		U/TDZ-MTE22*R3/4	22xR3/4	61	6
	12 1	U/TDZ-MTE28*R1/2	28xR1/2	72	7
Party Star	-80	U/TDZ-MTE28*R1	28xR1	72	7
The state of the s	H		35xR1-1/4		8
	-0/II	U/TDZ-MTE35*R1-1/4		86	
	1=1	U/TDZ-MTE42*R3/4	42xR3/4	112	9
		U/TDZ-MTE42*R1	42xR1	112	10
		U/TDZ-MTE42*R1-1/2	42xR1-1/2	112	11
		U/TDZ-MTE54*R1-1/2	54xR1-1/2	138	13
		U/TDZ-MTE54*R2	54xR2	138	13
Female Threaded Tee	ITCT2	Item Code	OD	L	ŀ
		U/TDZ-FTT15*RP1/2	15xRp1/2	64	3
		U/TDZ-FTT22*RP1/2	22xRp1/2	74	4
		U/TDZ-FTT22*RP3/4	22xRp3/4	74	4
		U/TDZ-FTT28*RP1/2	28xRp1/2	84	4
		U/TDZ-FTT28*RP3/4	28xRp3/4	84	4
		U/TDZ-FTT28*RP1	28xRp1	84	5
		U/TDZ-FTT35*RP1/2	35xRp1/2	100	4
		U/TDZ-FTT35*RP3/4	35xRp3/4	100	
	THO T	U/TDZ-FTT35*RP1-1/4	35xRp1-1/4	100	
		U/TDZ-FTT42*RP1/2	42xRp1/2	114	į
1000		U/TDZ-FTT42*RP3/4	42xRp3/4	114	
		U/TDZ-FTT42*RP1	42xRp1	114	
HE & Comments		U/TDZ-FTT42*RP1-1/4	42xRp1-1/4	114	
ALTE.		U/TDZ-FTT54*RP1/2	54xRp1/2	138	
		U/TDZ-FTT54*RP3/4	54xRp3/4	138	
	L L				
		U/TDZ-FTT54*RP1-1/4	54xRp1-1/4	138	6
		U/TDZ-FTT54*RP1-1/2	54xRp1-1/2	138	(
		U/TDZ-FTT54*RP2	54xRp2	138	7
		U/TDZ-FTT54*RP1	54xRp1	138	-
		U/TDZ-FTT66.7*RP3/4	66.7xRp3/4	145	(
		U/TDZ-FTT66.7*RP2	66.7xRp2	145	
		U/TDZ-FTT76.1*RP3/4	76.1xRp3/4	230	
		U/TDZ-FTT76.1*RP2	76.1xRp2	230	1
		U/TDZ-FTT108*RP3/4	108xRp3/4	310	
		U/TDZ-FTT108*RP2	108xRp2	310	9
Male Threaded Tee	ETCT	Item Code	OD	L	-
		U/TDZ-MTTI5*RI/2	15xR1/2	64	3
			0.575.5000077994	1000	
		U/TDZ-MTT22*R1/2	22xR1/2	74	
		U/TDZ-MTT22*R1/2 U/TDZ-MTT22*R3/4	22xR1/2 22xR3/4	74 74	4
		U/TDZ-MTT22*RI/2 U/TDZ-MTT22*R3/4 U/TDZ-MTT28*RI/2	22xR1/2 22xR3/4 28xR1/2	74 74 84	4
		U/TDZ-MTT22*R1/2 U/TDZ-MTT22*R3/4	22xR1/2 22xR3/4 28xR1/2 28xR3/4	74 74	4
		U/TDZ-MTT22*RI/2 U/TDZ-MTT22*R3/4 U/TDZ-MTT28*RI/2	22xR1/2 22xR3/4 28xR1/2	74 74 84	4
	<u> </u>	U/TDZ-MTT22*R1/2 U/TDZ-MTT22*R3/4 U/TDZ-MTT28*R1/2 U/TDZ-MTT28*R3/4	22xR1/2 22xR3/4 28xR1/2 28xR3/4	74 74 84 84	4
		U/TDZ-MTT22*R1/2 U/TDZ-MTT22*R3/4 U/TDZ-MTT28*R1/2 U/TDZ-MTT28*R3/4 U/TDZ-MTT28*R1	22xR1/2 22xR3/4 28xR1/2 28xR3/4 28xR1	74 74 84 84 84	
The same of the sa		U/TDZ-MTT22*R1/2 U/TDZ-MTT22*R3/4 U/TDZ-MTT28*R1/2 U/TDZ-MTT28*R3/4 U/TDZ-MTT28*R1 U/TDZ-MTT35*R3/4	22xRI/2 22xR3/4 28xRI/2 28xR3/4 28xR1 35xR3/4 35xR1	74 74 84 84 84 100	
The state of the s		U/TDZ-MTT22*RI/2 U/TDZ-MTT22*R3/4 U/TDZ-MTT28*RI/2 U/TDZ-MTT28*R3/4 U/TDZ-MTT28*R1 U/TDZ-MTT35*R3/4 U/TDZ-MTT35*R1 U/TDZ-MTT35*R1	22xRi/2 22xR3/4 28xRi/2 28xR3/4 28xR1 35xR3/4 35xR1 35xR1	74 74 84 84 84 100 100	4
		U/TDZ-MTT22*RI/2 U/TDZ-MTT22*R3/4 U/TDZ-MTT28*RI/2 U/TDZ-MTT28*R3/4 U/TDZ-MTT28*R1 U/TDZ-MTT35*R3/4 U/TDZ-MTT35*R1 U/TDZ-MTT35*R1 U/TDZ-MTT35*R1/4 U/TDZ-MTT35*R1/4	22xRi/2 22xR3/4 28xRi/2 28xR3/4 28xR1 35xR3/4 35xR1 35xR1-1/4 42xR3/4	74 74 84 84 84 100 100 100	
		U/TDZ-MTT22*RI/2 U/TDZ-MTT22*R3/4 U/TDZ-MTT28*RI/2 U/TDZ-MTT28*R3/4 U/TDZ-MTT28*RI U/TDZ-MTT35*R3/4 U/TDZ-MTT35*RI U/TDZ-MTT35*R1-1/4 U/TDZ-MTT42*R3/4 U/TDZ-MTT42*R3/4	22xRi/2 22xR3/4 28xRi/2 28xR3/4 28xR1 35xR3/4 35xR1 35xR1-1/4 42xR3/4 42xR1	74 74 84 84 84 100 100 100 114 114	
273		U/TDZ-MTT22*RI/2 U/TDZ-MTT22*R3/4 U/TDZ-MTT28*RI/2 U/TDZ-MTT28*R3/4 U/TDZ-MTT35*R3/4 U/TDZ-MTT35*R3/4 U/TDZ-MTT35*R1-1/4 U/TDZ-MTT42*R3/4 U/TDZ-MTT42*R1 U/TDZ-MTT42*R1	22xRi/2 22xR3/4 28xRi/2 28xR3/4 28xR1 35xR3/4 35xR1 35xR1-1/4 42xR3/4 42xR1 42xR1-1/4	74 74 84 84 100 100 100 114 114	
		U/TDZ-MTT22*RI/2 U/TDZ-MTT22*R3/4 U/TDZ-MTT28*RI/2 U/TDZ-MTT28*R3/4 U/TDZ-MTT35*R3/4 U/TDZ-MTT35*R1 U/TDZ-MTT35*R1-1/4 U/TDZ-MTT42*R3/4 U/TDZ-MTT42*R1 U/TDZ-MTT42*R1 U/TDZ-MTT42*R1 U/TDZ-MTT42*R1-1/4 U/TDZ-MTT42*R1-1/2	22xRi/2 22xR3/4 28xR1/2 28xR3/4 28xR1 35xR3/4 35xR1-1/4 42xR3/4 42xR1 42xR1-1/4 42xR1-1/2	74 74 84 84 84 100 100 100 114 114 114	
200		U/TDZ-MTT22*RI/2 U/TDZ-MTT22*R3/4 U/TDZ-MTT28*RI/2 U/TDZ-MTT28*R3/4 U/TDZ-MTT35*R3/4 U/TDZ-MTT35*R1-1/4 U/TDZ-MTT35*R1-1/4 U/TDZ-MTT42*R3/4 U/TDZ-MTT42*R1-1/4 U/TDZ-MTT42*R1-1/4 U/TDZ-MTT42*R1-1/4 U/TDZ-MTT42*R1-1/2 U/TDZ-MTT54*R1-1/2 U/TDZ-MTT54*R1-1/2	22xRi/2 22xR3/4 28xRi/2 28xR3/4 28xR1 35xR3/4 35xR1-1/4 42xR3/4 42xR1 42xR1-1/4 42xR1-1/2 54xR1/2	74 74 84 84 84 100 100 100 114 114 114 138	
271		U/TDZ-MTT22*RI/2 U/TDZ-MTT22*R3/4 U/TDZ-MTT28*RI/2 U/TDZ-MTT28*R3/4 U/TDZ-MTT35*R3/4 U/TDZ-MTT35*R1-1/4 U/TDZ-MTT35*R1-1/4 U/TDZ-MTT42*R3/4 U/TDZ-MTT42*R1-1/4 U/TDZ-MTT42*R1-1/4 U/TDZ-MTT42*R1-1/2 U/TDZ-MTT54*R1-1/2 U/TDZ-MTT54*R1/2	22×RI/2 22×R3/4 28×RI/2 28×R3/4 28×R1 35×R3/4 35×R1-1/4 42×R3/4 42×R1 42×R1-1/4 42×R1-1/2 54×R1/2 54×R3/4	74 74 84 84 84 100 100 100 114 114 114 138 138	
471		U/TDZ-MTT22*RI/2 U/TDZ-MTT22*R3/4 U/TDZ-MTT28*RI/2 U/TDZ-MTT28*R3/4 U/TDZ-MTT38*RI U/TDZ-MTT35*R3/4 U/TDZ-MTT35*RI-1/4 U/TDZ-MTT42*R3/4 U/TDZ-MTT42*R1-1/4 U/TDZ-MTT42*R1-1/4 U/TDZ-MTT42*R1-1/2 U/TDZ-MTT54*R1/2 U/TDZ-MTT54*R3/4 U/TDZ-MTT54*R3/4 U/TDZ-MTT54*R3/4	22xRi/2 22xR3/4 28xRi/2 28xR3/4 28xR1 35xR3/4 35xR1-1/4 42xR3/4 42xR1 42xR1-1/4 42xR1-1/2 54xR1/2 54xR1/2	74 74 84 84 84 100 100 100 114 114 114 138 138 138	
271		U/TDZ-MTT22*RI/2 U/TDZ-MTT22*R3/4 U/TDZ-MTT28*RI/2 U/TDZ-MTT28*R3/4 U/TDZ-MTT38*RI U/TDZ-MTT35*R3/4 U/TDZ-MTT35*R1-1/4 U/TDZ-MTT42*R3/4 U/TDZ-MTT42*R1-1/4 U/TDZ-MTT42*R1-1/4 U/TDZ-MTT42*R1-1/2 U/TDZ-MTT54*R1-1/2 U/TDZ-MTT54*R1/2 U/TDZ-MTT54*R1/2 U/TDZ-MTT54*R1/4 U/TDZ-MTT54*R1/4	22xRi/2 22xR3/4 28xRi/2 28xR3/4 28xR1 35xR3/4 35xR1-1/4 42xR3/4 42xR1 42xR1-1/4 42xR1-1/2 54xR1/2 54xR1/2 54xR1 54xR1	74 74 84 84 84 100 100 100 114 114 114 138 138 138 138	
271		U/TDZ-MTT22*RI/2 U/TDZ-MTT22*R3/4 U/TDZ-MTT28*RI/2 U/TDZ-MTT28*R3/4 U/TDZ-MTT38*RI U/TDZ-MTT35*R3/4 U/TDZ-MTT35*RI-1/4 U/TDZ-MTT42*R3/4 U/TDZ-MTT42*R1-1/4 U/TDZ-MTT42*R1-1/4 U/TDZ-MTT42*R1-1/2 U/TDZ-MTT54*R1/2 U/TDZ-MTT54*R3/4 U/TDZ-MTT54*R3/4 U/TDZ-MTT54*R3/4	22xRi/2 22xR3/4 28xRi/2 28xR3/4 28xR1 35xR3/4 35xR1-1/4 42xR3/4 42xR1 42xR1-1/4 42xR1-1/2 54xR1/2 54xR1/2	74 74 84 84 84 100 100 100 114 114 114 138 138 138	

EUROPE SIZE (BS EN10312)



Flange	F(A)	Item Code	OD	D	D1	н	b
	u u	U/TDZ-F15	15	95	65	42	14
		U/TDZ-F22	22	105	75	45	16
		U/TDZ-F28	28	115	85	47	18
OPTIMUS-TOZ		U/TDZ-F35	35	140	100	52	18
651000		U/TDZ-F42	42	150	110	58	20
	H-H- a o	U/TDZ-F54	54	165	125	65	20
0		U/TDZ-F66.7	66.7	170	130	70	25
110		U/TDZ-F76.1	76.1	185	145	91	20
		U/TDZ-F108	108	220	180	120	22

Pipe Bridge	В	Item Code	OD	L	L2	Н
		U/TDZ-PB15	15	158	57	37
ONLYSTIN	120	U/TDZ-PB22	22	178	65	44
	[+	U/TDZ-PB28	28	210	74	50

Joint Connector Male	JOM	Item Code	OD	L
		U/TDZ-JCM15*R1/2	15xR1/2	64
		U/TDZ-JCM22*R3/4	22xR3/4	68
(STORE)		U/TDZ-JCM28*R1	28xR1	78
OFFICE STATE	COOL	U/TDZ-JCM35*R1-1/4	35xR1-1/4	85
		U/TDZ-JCM42*R1-1/2	42xR1-1/2	90
	*	U/TDZ-JCM54*R2	54xR2	103

OPTIMUS

ASSEMBLY METHOD & ATTENTIONS

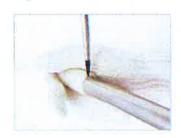
Pipe cutting

Use special cutting equipment to cut pipe vertically according to the construction size. Then remove burrs on the cutting surface by utilizing special file or deburring device to make sure the pipe end and outer surface are smooth, clean and without oil stain.



Connect preparation

Make a circle at the end of the pipe by using special scriber. Ensure O sealing ring is fixed in the correct position before inserting the pipe. And never use lubricant for installation. Pipe should be inserted into press fitting vertically, so as to avoid pricking the O sealing ring or falling it out. After inserting the pipe, if the DN is 10-25mm, the pipe marking line should be 3mm away from the pipe end; if the DN is 32-100mm, the pipe marking line should be 5mm away from the pipe end.



Compression connection

Read Carefully the instruction of the compression tool before handling. Let the groove of the special compression tool approach the convex part of the fitting closely. Make sure the plier is perpendicular to the pipe, then start compressing operation. When connecting inner and outer bread exchange joint, it should tighten the bread and then compress.



Test

After compression, use special hexagonal gauge to test the compression connection. If the compression connection is not proper, use special tool to compress again, and measure by hexagonal gauge again.

After the whole pipeline is installed, use water pressure test or gas pressure test to do the pressure test. The pressure of water pressure test should be 1.5 times larger than working pressure. And the pressure of gas pressure test should be 1.05 times larger than working pressure.



ATTENTIONS

- Do not prick the O-rubber sealing ring of the press-fittings.
- Ensure the pipe is positioned at the right place where is marked.
- Do not forget the compression operation.
- During transport and construction, keep the pipe, fittings and rubber sealing ring free from pollution, and preserve cleanliness and hygiene.





ORIGINAL



TEST REPORT

(This Report is issued subject to the terms & conditions set out below)

Setsco Services Pte Ltd 18 Teban Gardens Crescent Singapore 608925 Tel: (65) 6566 7777 Fax: (65) 6566 7718 www.setsco.com Business Reg. No. 196900269D

Date: 01st November 2017

Your Ref: -

Our Ref: MM-61080/MA

Page 1 of 2

Subject

Hydrostatic Pressure Test (Burst Pressure) on Stainless Steel Press-Fit pipes &

fittings assembly submitted by Te Deum Engineering Pte Ltd

on 26th October 2017.

Client

TE DEUM ENGINEERING PTE LTD

Block 161, Kallang Way

#01-03/08

Singapore 349247

Attn: Mr. John Goh

Date & Place

of Test

01st November 2017 at Setsco Laboratory

Method of Test:

Hydrostatic Pressure Test (Burst Pressure)

The test samples were assembled by client.

The test assembly was filled up with water & connected to a hydraulic pump. Hydrostatic pressure was gradually applied till first leak is observed or burst

pressure occurs.

Observations were then recorded.

Description of

Sample

One (01) set of Stainless Steel Press-Fit pipes & fittings assembly (refer to

photos attached) was received as follows:

S/No.	Sample Reference	Qty
1	Stainless Steel Press-Fit pipes & fittings assembly	1

Results

Hydrostatic Pressure Test

Refer to table 1.

MOHAMMAD AZAM Testing Officer CHEN YII

Assistant Manager (Mechanical Testing)

Mechanical Technology Division

Terms & Conditions:

(2) SETSCO agrees to use reasonable diligence in the performance of the Services but no warranties are given and done may be implied directly or indirectly relating to the Services, the Report or the botilities of SETSCO.

(3) SETSCO shall under no circumstances be liable to the Client or its agents, servants or representatives, in contract, tot (including negligence or breach of statutory duty) or otherwise for any direct or indirect loss or damage suffered by the Client, its agents, servants or representative howsoever arising or whether connected with the Services provided by SETSCO herein.

(4) The Report may not be used in any publicity material without the written consent of SETSCO.

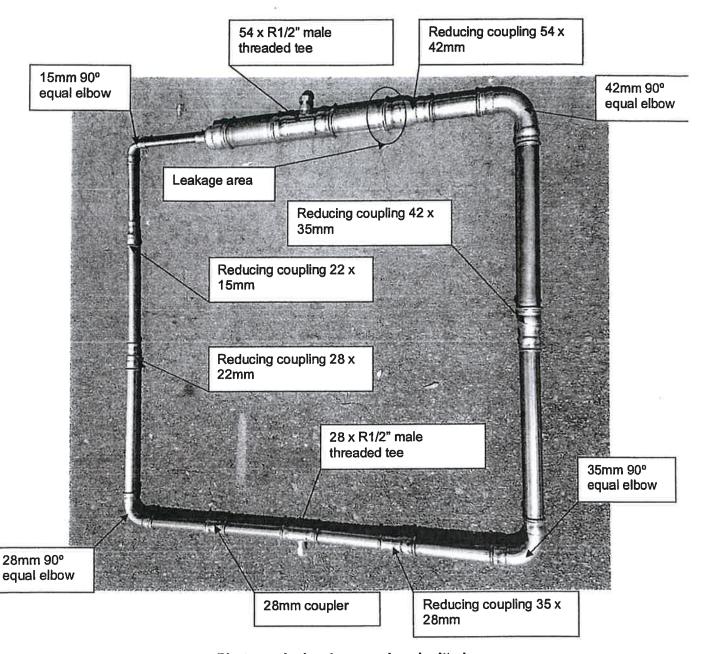
⁽¹⁾ The Report is prepared for the sole use of the Client and is prepared based upon the item submitted, the services required by the Client and the conditions under which the Services are performed by SETSCO. The Report is not intended to be representative of similar or equivalent Services on similar or equivalent items. The Report does not constitute an endorsement by SETSCO of the item.

⁽⁵⁾ The Report shall not be reproduced in part or in full unless approval in writing has been given by SETSCO.



MM-61080/MA

Page 3 of 3



Photograph showing sample submitted





SETSCO SERVICES PTE LTD

Serial No.: MP/TC0052/16-Rev 02 Date Issued: 12 Dec 2016

TEST CERTIFICATE

This certificate is a summary of line test and test reports as stated below:

TE DEUM ENGINEERING PTE LTD Block 161 Kallang Way #01-03/08 Singapore 349247

Attn: Mr. John Goh

FOR

Brand: OPTIMUS-TDZ
Test Standard: BS EN 10312:2002; AS/NZS 4020:2005
Product Type: Stainless steel pipe
Date Submitted: 08 Mar 2016, 05 Nov 2015, 30 March 2016, 30 Sept 2016

Metal noisetixe		Pass See MM-4876t/2- 1/DJ		(#)	Pass See MM-48750/2- 1/DJ	,	¥	Pass See MM-48760/2- 1/DJ	×
Chemical Composition		Pass See MM-48760/1- 2/CCH	X.	SAX	Pass See MM-4876011- 2/CCH	*	*	Pass See MA-A8760/1- 2/CCH).
ଶେ ଖାହେଥି	Pass See MM-52282/CCH/1	¥	i.	Pass See See MM-52282/CCH/1	77		Pass See MM-52282/CCH/1	341	ė.
ճարծաղել	Pass See MM-52282/CCH/3			Pass See MM-52282/CCH//	Ŷ		Pass See MM-52282/CCH/1	2000	ь.
and gnibriedxe	Pass See MM-52282/CCH/*	- G	714	Pass See MM-52282/CCH/1	*	×	Pass See MM-52282/CCH/1	7520	
-469.វ ខេត្តការក្សារ	Pass See MM-52282/CCH(2	2		Pass See NIA-52282/CCH/3		A	Pass See MM-52282/CCH/2	1 \$ 11	£
lenolaneniCl Inemotos com	Pass See MM-52282/CCH**1	(*	4	Pass See MM-52282/CCH/1	ě.	ı	Pass Sec MM-52282/DCH/1	(4)	340
tsusiV nottenimsx3	Pass See MM-52282/CCHri	ix.		Pass See MM-52282/CCH/1	*		Pass See MM-52252/CCH11	C#5	0
Tests	If dene. Passifiais	il not done, reference	if not done, no reference	if done, Pass/Fair	lf not done reference	If not done, no reference	if cone, Passifail	lf not done. reference	If not done, no reference
Product	304 Stainless stee	pipe Brand: OPTIMUS- TOZ Size: 015x0.6mm		304 Stainless steel	Pipe Brand: OPTIMUS- TDZ Size 022x0 7mm		304 Stainless steel	pipe Brand; OPTIMUS- TDZ Size: 025x0.8mm	

Terms and Controller Described with teasts to by your payor fortune

Page 1 of 3

isjeM noitosuxe		Pass See MM-48760/2- 1/DJ	187		Pass See MM-48760/2- 1/DJ	9#9		Pass See MM-48760/2- 1/DJ	7.	, i	Pass See MM-48760/2- 1/DJ	,
feoimedO noiheogmoo	75.	Pass See MM-48760/1- 2/CCH	4	Pass See MM-48760/1 2/CCH	(40)	x.	r	Pass See MM-48760/1- 2/CCH			Pass See MM-48760/1- 2/CCH	
Isəl dish6T	Pass See MNA-48720:1- 3/CCH	ž	2	Pass See MM-52282/CCH/1		×	Pass See MM-48760/1- 3/CCH	3.		Pass See MM-48760/1- 3/CCH		(*)
gninettel?	Pass See MM-48760/1- 3/CCH		6	Pass See MM-52282/CCH/1			Pass See MM-4876011- 3/CCH	ű.	Ç	Pass See MM-4876(V1- 3/CCH	J.	æ
រិកលិ gnibrseqxs	Pass See MAA-4876U1- 3/CCH		,	Pass See MM-52282/CCH ⁽¹			Pass See MM-4676011- 3/CCH		*1	Pass See MM-45760:1- 3/OCH	OK	£2
ssauµцбq √488°}	Pass See MM-4876W7-			Pass See MM-52282/CCH/2		×	Pass See MM-48760/1- 3/CCH	.30	I .	Pass See MM-48760:1- 3/CCH		
)ดกดเชกะเกมี โกรเกรามะธรณ	Pass See NM-48760/1- 3/CCH	4	4;	Pass See MM-52282/CCH/1	*:		Pass See MM-48760/1- 3/CCH			Pass Sea MM-48760/1-	(4)	v
Visua∮ nostenim∉x3	Pass See MM-45763/1- 3/CCH		٨	Pass See MM-52282/CCH/1	×	,	Pass See MM-48760/1- 3/CCH	(4)	,	Pass See MM-48760/1-	20.2	
Tests	li done. PassiFail	if not done reference	lf not done, no reference	If done, Pads/Fail	if not done. reference	if not done, no reference	If done, Pass/Fait	if not done. relerence	il not dane, no reference	if cone.	If not done, reference	If not cose, no reterence
Product	304 Stainless steel	pipe Brand: OPTIMUS.	SZE: W.SXT.Umin	ANA Comindens of page	Brand: OPTIMUS-	Size: Ø42x1.1mm	1	Stand: OPTIMUS-	See: 054x1.2mm		304 Stainless steel oppe Brand: OPT!MUS- TDZ	Size: Ø76.1x1.5mm

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SETSCO SERVICES PTE LTD

SETSCO

Serial No.: MP/TC0052/16-Rev 02 Date Issued: 12 Dec 2016

Metal noibsetixe	147	Pass See MM-48760/2- 1/DJ	*1	•:	Pass See MM-48760/2- 1/DJ	*	3(4)3	Pass See MM-48760/2- 1/DJ	¥ 0 €.
Chemical composition	e e	Pass See MM-48760/1- 2/CCH	*1	**	Pass See MM-48760/1- 2/CCH	a.	• 1	Pass See MM-48760/1- 2/CCH	3 e).
izət əliznəT	Pass See MM-48760/1- 5/CCH	*	÷	Pass See MM-48760/1- 3/CCH	20.	ĕ	Pass See MM-55975/CCH	3	•))
g∩in9∭el7	Pass See MM-48760/1- 5/CCH	a		Pass See MM-48760/1- 3/CCH		ž	Pass See MM-55975/CCH	(6)	**
Drift expanding	Pass See MM-48760/1- 5/CCH	8.	ji.	Pass See MM-48760/1- 3/CCH	(4	7	Pass See MM-55975/CCH	9.	30
ьзэгд - үеэү	Pass See MM-48760/1- 10/CCH	į.	3.0	Pass See MM-48760/1- 3/CCH	990	1	Pass See MM-55975/CCH	,	·
IsnoiznamiQ Inamanuzaam	Pass See MM-48760/1- 5/CCH	(B)		Pass See MM-48760/1- 3/CCH		347	Pass See MM-55975/CCH	A CO	
IsusIV noitsnimex∃	Pass See MM-48760/1- 5/CCH	· · · ·	no ₂	Pass See MM-48760/1-		16.	Pass See MM-55975/CCH		•
Tests	If done, Pass/Fail	If not done, reference	If not done, no reference	If done, Pass/Fail	If not done, reference	If not done, no reference	If done, Pass/Fail	If not done, reference	If not done, no reference
Product	304 Stainless steel	pipe Brand: OPTIMUS- TDZ Size: 088 9x2 0mm		304 Stainless steel	pipe Brand: OPTIMUS- TDZ Size: Ø4108x1 5mm		204 Ctainless stool	Brand: OPTIMUS-	Size: Øbb./X1.Zmm

Note: This certificate supersedes Certificate No. MP/TC0052/16-Rev 01 dated 21 April 2016.

CHEN YU

Assistant Manager Mechanical Technology Division

SETSCO

TEST CERTIFICATE

Serial No.: MP/TC0041/16 Rev.01 Date Issued: 12" December 2016

This certificate is a summary of the test and test reports as stated below:

TE DEUM ENGINEERING PTE LTD Block 161 Kallang Way

#01-03/08

Singapore 349247

Attn: Mr. John Goh

FOR

Brand: Optimus-TDZ
Test Standard: BS EN 1254-2:1998, AS 3688:2006, AS/NZS 4020;2005, SS 375:2001, SS 270:1996
Product Type: Stainless Steel 304 Press Htting
Date Submitted: 05 Nov 2015, 20 Aug 2015, 09 Nov 2015, 30 Sep 2016,14 Nov 2016

Тожейу	*.	Pass See MM- 48780/3/T	1.0
Metal Extraction	•	Pass See MM- 48760/2-	3.0
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Method of determining campetability of fitting with pipe	*	a₫	(#)
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lametri nebru eseningüldes. बाग्रहरूषा अंडोटकोर्घपूरी	Pass See MM-48780/1-6/CY & & & & & &	5	r
Tests	M done. Pass/Fail	of not done	if not done. No reference
Product	Stainless Steel 304	Press Pitting Brand: Oblimus- Type: 45° plain eibow Sze: 15, 22, 28.	35, 42, 54, 66.7. 76 1, 88.9, 108

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Page 1 of 9

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mber 2010	roJoetk3 tabM	i.	Pess See MMA 48760/2-	*)	a	Pass See MM 48750/2- 1/DJ		×	Pess Sea MNA- 48760/2-	(6)
Lace issued : 12 December 2010	Elastomeric seala		Passs See MM- 48780/1- 1/CY		e.	Pass See MM- 48750/1- 1/CY	,		Pass See MIN- 48760/1- 1/CY	
nate testa	Method of determining compatibility of fitting with pipe	H		8	(e)		%	(4)		(0)
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	luo fluq ol esnelaiseA	14	Pas Se MM-4876 8		r	Pass See MM-4E76071		ě	Pass See MM-4875041-5/CY AMA-55978/MA/1	£
a	Leaklighlneरंड under internal hydroziaric pressure	Pass See MM-4876011-64CY & MM-55976/MA/3	36		Pass See MM-48750/1-5/CY & MM-55976/MA/3	٠	((c)	Pass See MM-43780/1-8/CY & MM-55976/MA/3	300	
SETSCO SERVICES PTE LTD	Tesis	lf done Pass/Faul	if not dane. reference	If not done	ficione, PassiF∌il	If not done. reference	If not done.	if done. Pass/Pai:	ll not done. reference	If not done, no reference
SETSCO SER	Product	Stainless Steel 304 Press Filting Brand: Optimus-	102 Type: Adjustable coupling Size: 15, 22, 28 33, 42, 54, 66, 7 76, 1, 88,9, 108		Stainless Steel 304 Press Fitting Brand: Optimus-	Type: 90" ptain elsow Szas: 15, 22, 28, 35, 42, 54, 66.7,	CB. 1, 48:3, 1930	Stainless Steel 304	Brand: Optimus- TDZ Type: Equal Coupling	508 1.08 1.08

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Serial No.: MP/TC0041/16 Rev.01 Date Issued: 12" December 2018

Product	Stainless Steel 304 Press Fibrig Brand: Optimus-	TDZ Type: ½ male threaded tee Size: 15, 22, 28, 35, 42, 54, 56, 7		Stainless Steel 304	Press Fitting Brand: Optimus- TDZ Type: ½: Female coupling Size 15		Stainless Steel 304	Press Fraing Brand: Optimus- TDZ Type: ½ male threaded elbow Size: 15	
Tests	lf done. Pass/Fail	if not done. relerence	If not done, no reference	if done, Pass/Fall	If not done, reference	# not done.	if done, Pass/Farl	if not daze. reference	If not done,
Leaktighlness under internal hydrossas under internal	Pass See MM-4876011-5/CY & AMM-55976/MAJ3	1100	(a)	Pass See MM-48750x1-6/CY		(4)	PBSS See MM-45760/1-6/CY	c	
Resistance to pull our	ï	MM-487	'n	×	Pass See MM- 48760/1- &/CY		**	Pass See MM- 48760/1-	
lenteini tehnu szentígulásal sitiku swazeng alstachlyrí galbaed at belocidus		Pass See MM-487601-8/CY & MM-55976/MA/1	(*)	8	Pass See MM- 48760/1- 6/CY	Ŷ	j.	Pass See MM+ 48760/1- 6/CY	ī
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Resistance to pull-out of assembled		Pase See MM-4876011-7/CY B MM-55976/MA/2	9	*	Pass See MMA 48760/1- 7/CY	×	100	Pass See MM- 48760/1- 7/CY	*
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sleat dismotatia	ï	Pass See NNA 48760/1- 1/CY	*	8	Pass See MM- 48760/1- 1/CY		ij.	Pass See MIN- 48760/1-	
Meisi Extraction	g.	Pass See MM- 48760/2- 1/DJ	4	8	Passa See MMA- 48760/2- 1/DJ	9	*	Pass See MN4- 48760/2-	*
γίολοΤ	,	Pass See MNA 48760/3/T	4	X	Pass See MMA 4876003/T	я	а	Pass See MM- 48760/3/T	

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Serial No.: MP/TC0041/16_Rev.01 Date Issued: 12th December 2016

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Product	Stamess Steel 304 Press Fitting	Dype Equal Tee Size 15, 22, 26 35, 42, 54, 66 7, 76 1, 46 9, 108		Stainless Steel 304 Press Fitting Researt Oremies	Type: Plac Cap Size: 15, 22, 28, 35, 42, 54, 66 7, 76.1, 83.9, 108		Stanless State 304	Press Fitting Brand: Optimus- TOZ Type: ½ female threaded efbox Straints		
Tests	If done. Passiveau	lf not done. reference	If real done.	M done. Pass/Faji	If not dense reference	If nox done, ng reference	lf done. Pass/Fail	lf not done. reference	If not done, no reference	
Leahlightness under Internat hydrostatiq zikateorbyn	Pass See MM-4876011-6/CY & MM-55976/MM-3	34	4	Pass See AM-49750/1-6/CV & MM-55976/MA/3		,	Pass See MM-48760/1-6/CY	¥	U⊕1	
lyo llyq ot eonstalaeA	•	ARA-487 MM-555	*	Ĭ.	, , , , , , , , , , , , , , , , , , ,	9.	ž	Pass See MAN- AB750/1- 6/CY		
Leahkighress under internal क्रिकेट के प्रकटन्याय जोड्डर अभेरेडर gnlbried of belooker	Ū	Pass See MM-487601-6/CY MM-55976/MA/1		ĸ.	Pass See NMA-48780/1-6/CY & MM-55978/NAV1		3	Pess See MM. 48760/1- 6/CY	a.	
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yldmessa sinloj lo rirgnark		*	*	ń	<u>«</u>	ř		Pass See MAA- 467601- 77CY		
Testing of sonetales?	·	Pass See MM-48760/1-7/CY 8 MM-55976/MA/2		,	Pass See MM-4876@1-77CY \$ MM-55976/MAVZ	i.	,	Pass See MM- 48760/1- 77/CY	12	
Method of determining policy guilling with allege	Ē	× 10	,	ř,	≯ №	ŝ	×	Pass See NM- 4676011- 77CY	(v	
гіваг хітвиноргвіЗ		Pass See MM- 4876011-		9)	Pass See MM- 48760/1-	ŧ	Y	Pass See NRA- 4875011- 1/CY		V
Meial Extraction	¥	Pass See MM- 48760/2- 1/DJ	×	٠	Pess Sec MAR- 48760/2-	ž.		Pass See NMA- AB760/2- 1/DJ	. (11
ұйо і ма Т		Pass See MM- 48760/3/T	÷	9	Pass See MM4 48760/3/T	ě	X	Pass See MM- 48760/3/T	9	

Serial No.: MP/TC0041/16 Rev.01 Date Issued: 12th December 2016

Product	Slames Steel 304	Press Fitting Brand: Optimus- TDZ Type: 27 male coupling		Stainless Steel 304 Press Fitting Brand: Optimus	TDZ Type: %" female fine3ded tea Size: 15, 22, 28, 35, 42, 54, 66.7.	76.1, 88.9, 108	Stainless Steel 3D4	Press roung Brand: Oppmus- Type, reducing (ee Size: 22x15, 28x22: 35x22.	42x28, 54x28
Tests	lf done, Pass/Fali	if not done reference	if not done. no reference	if done. Pass/Fail	Il nor done. reference	if not dane. no reference	If done, Pass/Fail	И sor done. reference	If not done. no reference
Leakiighiilead under internal hydrosialic preseure	Pass See MM:48750:1-6:CY			Pass See MM-48760/1-6/CY 8 MM-55976/MA/3	æ	18	Pass See NM-48760/1-6/CY		(4)
Resistance to pull out	e!	Pass See MM- 48760/1- 6/CY	ð.		P S NM-487 MM-559	ı	y.	Pass See MM4 48760/1-	la:
lemais abun ssamilgiskeal Islinwanuasang alistonbyn grabnad of bataskus	36	Pass See MM- 4875011- 6/CY	l(ē		Pass See AMA-4876DY-B/CY & MM-55976/MA/1	×	è	Pass See MM- 48760/1. 6/CY	F)
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fo tuo-llug of sonstalze.F baldmesza	(*)	Pass Sea MMA MB760/1-	3000		P895 See MM-46760/1-7/CY 8 MM-55978/MA/2	:*	ä	Pass See MM- 4876041- 7/CY	Đ
Method of determining competibility of fitting with pape		Pass See MM- 487601-	:00	39	* ~	-	•	Pass See MM- 48760/1-	*
Eleas charconals	e)	Pass See MM- 48760/1-	62		Pass See MM ^a 48760/1-	w:		Pass See MIM- 48760/1- 1/CY:	A
Metal Extraction	5	Pass See MM- 48760/2- 1/DJ			Pass See MM- 48760/2- t/DJ	(4)	*	Pass See MM- 48760/2- 1/0.1	¥
Toxicity		Pass See MM- 48760/3/T	0.		Pass See MM- 48760/3/T	,(*)'		Pass See MM· 48760/3/T	ю

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Serial No.: MP/TC0041/16 Rev.01 Date Issued: 12" December 2016

Product	Staintess Steel 304 Press Früng	Brand: Optimus—TDZ Type: reducing coupling	42x28, 54x28	Stainless Steel 304	Press Fitting Brand: Optimus- TDZ Type: % rotetable female coupling	F25 52	Stanless Steel 304	Press Fitting Brand: Optimus- TOZ Type: % female coupling	77 276
Tests	lf done. Pass/Favi	if not done, referance	lf not done, no reference	if done. Pass/Fair	if not dene	li not done. no reference	l' done. Pass/Faii	lř nol done, reference	If not dane. no reference
lameini nabau eseriifigiikisel enuasent pileleotbyń	Pass See MM-4676311-6407	v	ï	Pass See MM-48750/1-G/CY	(0)	ý	Pass See MM-48750/1-5/Cv	\epsilon	
Resistance to pull out		Pass See MM- 48760/1- 5/CY	ě	ŝ	Pass See MM: 48760/1- 5/CY	•		Pass See MM- 48760/1- 6/CV	
lenightness under mignikeal hydrosiatic prassing gwasard oi beadwg	41	Pass See MRA 48760/1- 6/CY		,	Pass See MM- 48750/1- 6/CY	*)	16	Pass See MM- 48760/1- 6/CY	
ระคาร	42	K	NA	¥.	NA	AN	NA	NA	Z.
dagab nasam lo notisenimaleO notisedliceirseb to	N.A.	NA	AN A	47	A.A.	Α¥	AM	NA A	NA.
ydmosse alnicy to Algebra	٠	PRES See MMA- 48760/1- 7/CY	.0		Pass See NM- 48760/1- 7/CY		,	Pass See MM- 48760/1-	¥
Po tuo-liuq ot aonstaiaeA peldmasse		Pass Sae NM- 48760/1-	39		Pass See MAL 48760/1- 7/CY	T.	9)(Pass See MNA 4875/011.	9
Mesthod of determining with pipe	ž :	Pass See NNA 48760/1- 7/CV			Pass See MM. 48760/1-	300		Pass See MM- 48760/1- 7/CY	N.
edeas cincinolical3	*	See MM- 48760/1-	5	1	Pass See MM- 48760/1-		3.5	Pass See MM- 48760/1-	
Ме(я) Ехивсіюя	3	Pass See MN- 48760/2- 1/DJ	8.		Pass See MM- 48760/2- t/DJ	lf.	a	Pass See MM- 48760/2- 1/DJ	14
ĬoĸĊħy		Pess See MM 48760/3/T		j)	Paiss See MM-	9		Passa See MM- 48760/3/7	.18

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Serial No.: MP/TC0041/16_Rev.01 Date Issued :12" December 2018

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18	

Product	Stanness Steel 304	Fress Fitting Brand: Optimus- TDZ Type: X* male threaded etbow	77 Wilh	Stanless Steer 304	Brand: Opplings- TDZ Type % female threaded elbow	4K9. 62	Stainless Steel 304	Fress Friting Brand: Optimus- TOZ Type: W: male coupling	
Instructions	M done, Pass/Fau	If not done, reference	If not done.	if done, Pass/Fail	if not done reference	If not done, no reference	If done, Pass/Fail	H not opne.	If hat done, no reference
Leaktight/lass under internal	Pass See MM-48760/1-8/CV		,	Pass See MM 48760/1-6/CY		(6)	Pass See MM-487601-6/CY		5#1
Resistance to pull out	15	Pass See MM- 48760/1- 6/CY	4		Pess See NMA 4876011- 6/CY	*,		Pass See MAA 48760/1- 5/CY	*
Leakilghiness under internal hydrosiain pressure whilst gribmed of bestalding		Pass See NM- 48769/1- B/CY	ŧ	,	Pass See MM- 48760/1.			Pass See MAA 48760/1-	x
Slress corrdston recisiones	N.	N.A.	NA A	Ą	NA	AN AN	¥	4X	2
Determination of mean depth notealistical	NA	ď.	NA A	N.A.	NA A	NA	A N	ž	₹ X
yldmazza striloj to ritgnatiZ		Pass See NAA- 487601-	2	*	Pass See MAA- 487601-	j	4	Pass See MM- 48760/1-	
to tuo-laug of eoristeesস beldmesse	*	Pass Sed MM- 48760/1-	Ş	ě	Pass Sec MM- 48760/1-	J.C.		Pass See MMA 48760/1-	110
Method of determining compatibility of filling with pipe		See MIM- 48760/1-	A)//	(*)	Pass See MM- 48760/1-	//CA	*	Pass See MM. 48760'1-	, (2)
alasz altemoladia		Pass See MM- 48760/1-	JCA	·	Pass See MM- 48750/1-	1/CV	*	Pass See NMA 48760/1-	NCY.
Metel Exiraction		Pass See MNL 48760/2-	100		Pass See NMA- 48760/2-	LO1	*	Pass See NAM 48760/2-	20/2
Toxicity		Pass NIM	40 rauva		Pass See	46760737	,	Pales See	Horoday.

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Serial No.: MP/TC0041/16_Rev.01 Date Issued: 12th December 2016

Probuel	Stainless Steel 304	Press Fitting Brand: Optimus- TDZ Type I" female Coupling	07 15 7	Stainess Stoel 304	Press riging Brand: Optimus- TDZ Type: I' male Ithreaded elbow Size: 28		Standers Steel 304	Press Fitting Brand: Optimus- TDZ Type: 1 female threaded elbow	27.52
Tests	if oone. PassiFail	if not done reference	If not done no reference	If done. Pass/Faul	fl not done. reference	il not done. no teřerence	H done. Pass/Fail	lf not done. reference	if not dane. no reference
Leaklightussa under internal hydrostain mistanbyd	Pass See MM-4876011-6/CY	6	ā.	P245 SEe MM-4876011-81CY		nc.	Pass See MM-4876011-6/CY	,	
ുവറ sug o bansizisekh	,	Pass See MNA- 48760/1- 6/CV	×	a	Pass See MMA 48760/1-		5	Pass See MM- 48760/1- G/C-Y	9
Leakilghtness under internal tydrochair prassen a whast tydrochair prassen a tydrochair	390	Pass See MRA- 4876011- 6/CY			Pass See MMA- 48760/1- E/CY		,	Pass See NMA 48760/1.	147
Sinese conosonos esens	4 Z	A.	Ą	NA	NA	N.	ď Z	NA	Ą
Determination of mean depth noticethors to	첫	A A	A A	NA	\$	Ą	N.A.	NA	¥
Vidmaezes ashirij to ritipnastič		Pass See MM- 48750/1-	N.		Pass See MM- 48760/1-			Pass See MM- 48760/1- 7/CY	**
Resistance to pull-out of	,	Pass See MM- 48760:1-		×	Pass See MM· 4876011-	%	ï	Pass See MM- 48760:1- 7/CY	(*)
Methad of deletrining web pipo		See MM 48780/1-	lo po		Pass See MM- 48760/1-	ā	¥	Pass See MM 4876011-	
शहरुष्ट गरुमाणाटक्षेत्रि		Passs See NMA 4878011-	К		Pass See MN+ 48760/1	(4)	4.	Pass See MM- 48760/1-	
подрадка јејеју		Pass See MM- 48760/2-	٠	74	Pass See MM4 48760(2.		(6)	Pass See MAA- 45760/2-	
γβαίχοΤ		Pass See MMA 48780/3/T		7.0	Pass See MM- 48760/3/T		i ing	Pass See MM-	3

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Temps and Condition

Serial No.: MP/TC0041/16_Rev.01 Date Issued: 12* December 2016

Prozinct	Stainless Steel 304	Press Fitting Brand: Optimus- TDZ Type:1 male coupling	Size: 28	Steinless Steel 304	Press Fitting Brand: Optimus- Tope.3/4" male litreaded for	SIZE: 80.9. 100
TESSIS	ff dane, PassyFail	il nos done, reference	If not dane, no reference	if done. PassiFall	if not done, reference	If not done, to reference
Leaklighlness under Internal hydroslauc pressure	Pass See MM-48750/1-5/CY		(e)	Pass See MM-87601-SCY		tá
lvo lluq of อวกลเย่ะชA	18.	Pass See MM- 48760/1- E.CV	i		Pass Sec MM- 4876041-	1,7
โรกาอร์ที่ Tebriu zeanifhgii.ส่ชยไ กับการการการการการการการการการการการการการก	72	Pass See MM- 48760/1- 6/CY	a .		Pass See MM- 48700/1- 6/CY	0.9
Siless corrosion resistance	Z.	AA	MA	A.	NA	Ž
Defermination of mean depth of the properties of depth of the properties of the prop	¥2	NA	A.	NA	₹.	Z,
yldmæze zjnioj îo dignasiS	ě	Pass See MM. 48760/1-		,	Pass See MM- 48760/1.	280
lo iua-iluq os anaizizaA boldmazas	į.	See NMA 48760/1-		×	Pass See MNA- 46760/1-	r.
औelhod ol determining compallbilly of fifting with pipe	*	Pass See MM- 48760/1-	(0)	è	Pass See MM- 4876/VT- 7/CY	-
etese cinemote#3	E	Pass See MM- 48760/1-	(4)	×	Pass See MM- 48760/1	
пойоватк∄ ГегеМ	¥	Pass See MM- 48780/2-			Pass See MM- 487602- 1/0.J	
ykolxo1		Pass See MM 48760/3/T	100		Pass See MMA 48760/3/T	0

Note: This certificate supersedes Certificate No. MP/TC0041/16 dated 31* March 2016.

CHEN YU

Assistant Manager Mechanical Technology Division



No.	Project	M & E Consultants	Plumber	Units	Year of Completion
	Apartments				
1	Parc Centros @ Punggol Central	Rankine & Hill	King Wan	618	2014
2	One Dusun Residences @ 1 Jalan Dusun	PCA Consultants	Acmes King	154	2014
3	Bentley Residences @ 30 Kovan Road	K G Goh Consultants	Yi Chye	48	2015
4	Sim's Urban Oasis @ Sims Drive	United Project Consultants	KingWan	1024	2017
5	27 Charlton Road (27 Units of Terrace)	PCA Consultants	Wne One	27	2015
6	Space @ Kovan (Mix Development 28 sty 155	PCA Consultants	Acmes King	231	2014
	units and 76 shops units)		· ·		
7	Yishun North Point City (Phase 1)	Aecom Singapore	ANS	950	2018
8	HDB Carpark @ Kaki Bukit Estate C6	Rankine & Hill	P & W		2017
9	HDB Carpark @ Chua Chu Kang N1C5	Rankine & Hill	P & W		2017
10	A&A Work for HDB Town Council Jurong West Blk	Town Council	Nam plumbling		2018
	643 to 647 and Blk 686 to Blk 695				
11	A&A Work for HDB Town Council serangoon	Town Council	Goh & Feng		2018
	North Ave 5 Blk 548 to 554				
12	A&A Work for HDB Town Council Pasir Ris St 11	Town Council	C.P.Lee		2018
13	Blk 123 A&A work for HDB Town Council Campassvale Walk Blk 228B	Town Council	C.P.Lee		2018
14	A&A Work for HDB Town Council Tampines St 52 Blk 405E	Town Council	Goh & Feng		2018
15	A&A Work for HDB Town Council 10 Block at New Market Street	Town Council	ISO Team, TNS Alliance		2018
16	HDB 8 Block of 26 Storey Apartment at Punggol Northshore Contract 1 & 2	HDB	Chew plumbling	1694	2020
17	11 Block of 12 Storey HDB Apt @ Sembawang N1 C6 & C12	HDB	Chew plumbling		2018
18	HDB 4 Block of 17 Storey Apartment at SengKang	HDB	Chew plumbling	511	2018
19	Residential unit and Terrace house at Faber Walk		FT Plumbing	210	2017
20	HDB Willington and HDB River vale Crescent	NTH Construction	NTH Construction		2017
21	HDB Town Council		Chan Weng Wah		2017
	HDB 19 Storey @ Circuit road C43B	Surbana Jurong Consultants	Alpha & Omega Engineering Services Pte Ltd	750	2019
23	Condo at 21 Paya Lebar Cresent		Northway Fire Protection		2018
24	HDB 9 Blk 13/14 storey apartment and 2 Blk 5/6 storey carpark at sengkang N4C30	United Project Consultants	KW Construction	1100	2019
25	HDB 1 Blk of 29 storey apartment at Choa Chu Kang N1C15	United Project Consultants	KW Construction	300	2018
26	HDB @ Choa Chu Kang	Rankine & Hill	PNW Engineering Pte Ltd		2018
27	4 Blk of 3/9 Storey Apt with Shops at Yishun Ave 4 Wisteria	Surbana Jurong Consultants	Accise Engineering Pte		2018
28	Apt at West Coast Vale (Parc Riveira)	Conteem Engineers Pte Ltd	Blue Moon Engineering Pte Ltd		2017
29	HDB Sengkang Neighbour 3 contract	Chew Plumbing	Chew Plumbing	511	2018
30	Bartley Rd Terrace House	DP Engineers Pte Ltd	Aspect	45	2017
31	29 Ridout rd @ 5 HDB viod Deck	NTH Construction	NTH Construction		2018



No.	Project	M & E Consultants	Plumber	Units	Year of Completion
32	Duxton rd/ Bedok Resorvior/ Biopolis/ St Martin Dr	Power Jack	Power Jack		2017
33	12 Storey Apt @ 4 Bedok Rise	KTP Consultants	ANS Plumbing & Sanitary Pte Ltd	726	2018
34	18 Storey Apt @ 11 Kee Seng St	COEN Design International	ANS Plumbing & Sanitary Pte Ltd	56	2018
35	Apt at Bedok N4C9 @ Bedok North RD	KTP Consultants	Chern Seng Engineering Pte Ltd	660	2017
36	5 Sty Residential Flat Development with Attic with carpark and Communal/Ancillary Facilities @ 5 Still Rd	Elead Associate	Meng Hup Seng	60	2017
37	Choa Chu Kang Town Council - water pipes replacement	Surbana Jurong Consultants	Deluge Fire Protection Pte Ltd		2019
38	4 Buildings Apartments @ Fernvale Rd	Parsons Brinckerhoff Pte Ltd	King Wan Construction Pte Ltd	735	2019
39	20 Buliding of HDB Apt @ Tampines N6C8,9,10	Surbana Jurong Consultants	KW Construction	2022	
40	7 Buildings 15 sty Apartments (The Tapestry)	Belmacs Pte Ltd	Wang Kok Sewerage Construction Pte Ltd	861	2018
41	6 Buildings 14-15 sty Apartments (Park Colonial)	United Project Consultants	Wang Kok Sewerage Construction Pte Ltd	805	2019
42	8 sty Apartments (AKA THE ADDITION)	Elead Associate	Nam Fang Co (Pte) Ltd	26	2018
43	HDB 4 buildings 17 sty @ Punggol West C39	United Project Consultants	Chew Construction Pte Ltd	490	2018
44	2 Buildings 30sty Apartments (Sturdee Residences)	Elead Associate	Chew Construction Pte Ltd	305	2018
45 46	Terrace House - 2 sty 19 Bedok Residential Estate - East Sectors, Zone 1	Builders 265 Pte Ltd	NTH Construction J.Keart Alliances Pte Ltd		2018 2019
47	7 Building with Community Club @ Bedok South N3C27	Surbana Jurong Consultants	AAL Engineering Pte Ltd	940	2019
48	YuHua Constituency Town Council - water pipes replacement	EM Services	Deluge Fire Protection Pte Ltd		2019
49	Jurong Central Constituency Town Council - water pipes replacement	EM Services	Deluge Fire Protection Pte Ltd		2019
50	Taman Jurong Constituency Town Council - water pipes replacement	EM Services	Deluge Fire Protection Pte Ltd		2019
51	Marine Parade Constituency Town Council - water pipes replacement	EM Services	Deluge Fire Protection Pte Ltd		2019
52	Tampines Constituency Town Council - water pipes replacement	EM Services	Deluge Fire Protection Pte Ltd		2019
53	Bukit Batok Constituency Town Council - water pipes replacement	EM Services	Deluge Fire Protection Pte Ltd		2019
54	Ang Mo Kio Constituency Town Council - water pipes replacement	EM Services	Deluge Fire Protection Pte Ltd		2019
55	Bedok Town Centre Ave 1	KTP Consultants	Heng Yuan Engineering Pte Ltd	500	2019
	Bukit Merah View (Town Council - 23 Building) Upgrading	EM Services	MKK Engineering Pte Ltd		2020
	Tampines Central Mechanical work upgrading	EM Services	Deluge Fire Protection Pte Ltd		2021



JOB REFERENCES

No.	Project	M & E Consultants	Plumber	Units	Year of Completion
58	Tampines West Division upgrading	EM Services	Deluge Fire Protection		2022
59	Apartments - Woodlands N7C27	Rankine & Hill	Pte Ltd AAL Engineering Pte Ltd	629	2020
60	Apartments & Shops 2 Buildings 36 sty (WHISTLER GRAND)	United Project Consultants Pte Ltd	Wang Kok Sewerage Construction Pte Ltd	716	2019
61	Apartments & Shops 5 Buildings 16 sty (LE QUEST)	Rankine & Hill (S) Pte Ltd	Fire - Guard Engineering Pte Ltd	516 - 49	2019
62	5 sty Apartments (FORMER JERVOIS GREEN / JERVOIS PRIVE)	HPX Consulting Engineers	YCP Pte Ltd	45	2019
	Dormitory				
1	Dormitory @ Punggol Timor (10 Blocks of 6 Stys)	Icon Engineerings	Teck Hien		2014
2	Dormitory @ 1A Short Street (6 Blocks)		Tai Hwee		2014
3	Worker's Dormitary		J.Keart Alliances Pte Ltd		2018
4	NUS	Indeco Engineers	ANS		2018
	Commercial				
1	Fty @ 18A Sungei Kadut Loop		Acmes King		2013
2	Fty @ 34, 36 & 38 Senoko Drive		JK Plumbing		2014
3	Fty @ 25 Tanjong Kling Road		PNW		2014
4	Fty @ 24 Gul Crescent	Figtree Projects Pte Ltd	Wne One		2014
5	PSA @ Pasir Panjang		Jeson		2014
6	Panasonic Building @ Bedok		Cheang & Lee		2014
7	Nursing Home @ 5 Pearl's Hill Road				2015
8	Factory @ 22 Benoi circle		G & C		2015
9	Factory @ 30, 32 Kian Teck Road		M-stars		2015
10	Factory @ 11 Kian Teck Drive		PNW		2015
11	Factory @ No 16 Tuas Ave 10		Sunland		2015
12	Factory @ Bulim Ave, Jurong West St 22	Figtree Projects Pte Ltd	Wne One		2015
13	Factory @ 36 Tuas South St 3		Image M&E		2015
14	18 Tuas Ave 10		C.K Lim 2		2015
15	Civic Centre @ Toa Payoh Lorong 8		GPS Engineering		2015
16	Foodcourt @ Jalan Tukang Medtech Building		PNW		2015
17	2-Storey Social Service Office @ Taman Jurong		NTH		2015
18	SS@CITYLINK B1-63		De Ir Pte Ltd		2015
19	Woodlands Spectrum Tee		FullHouse Building		2015
20	NUS Museum				2015
21	Improvement to water distribution system @ defu industrial estate & amk industrial estate park 2	JM Pang & Seah	S & P		2018
22	164 Gul Circle (JTC)	Aurecon Singapore			2018
23	Factory @ Woodlands Industrial E9	One Engineering	ATP Engineering	100	2017
	Community Centre 5 Storey @ Keat Hong	KJ Group Consultants	Acmes King	100	2017
	Basement Carpark at Tan Ching Rd	M & P Consulting	rienies king		2017
	9 Storey factory at Woodlands	A build Construction	ATP Engineering		2017
	Besco Industrial Building @ 26 Ubi Road 4 (A&A)		Active Fire Protection		2017

Pte Ltd



No.	Project	M & E Consultants	Plumber	Units	Year of Completion
28	Senoko Way (A&A)		Active Fire Protection Pte Ltd		2017
29	Upgrading Chestnut Ave Water Work	Black & Veatch (SEA) Pte Ltd			2017
30	A&A works on fire protection		J.Keart Alliances Pte Ltd		2017
31	Office/ Warehouse @ 348 Jalan Boon Lay	PDC Consulting Engineers	Northway Fire Protection Pte Ltd		2018
32	2 Storey Hawker Centre/ CarPark @ Pasir Ris Drive 3	CPG Consultants	ADES Engineering	113	2018
33	Water Venture club at Sembawang				2017
34					2017
35	New Water Plant	Yeung Yew	Yeung Yew		2017
36	Factory/ 9 Storey @ Tampines Ave 10	Aecom Singapore	ANS Plumbing & Sanitary Pte Ltd		2017
37	Hougang Community Club	HY M&E Consultancy	Sanyu Engineering		2018
38	Sembawang Water Venture Club @ Jln Mempurong		Kingston Sanitary & Plumbing Pte Ltd		2017
39	Data Centre @ Sunview Dr		ACM Contracting Pte Ltd		2018
40	Factory @ 41 Benoi rd		ANS Plumbing & Sanitary Pte Ltd		2017
41	Multiple Block of Office & Shops @ Woodlands Square	Alpha Consulting Engineers Pte Ltd	Millennium Plumbing & Sanitary Pte Ltd		2016
42	Kian Teck 2 Blk of 3 Sty Factory		PNW Engineering Pte Ltd		2018
43	Woodland Data Centre	Aurecon Singapore	S&P System Services Pte Ltd		2018
44	Factory @ woodland sector 2	A build Construction	ATP Engineering	100	2018
45	Factory @ 50 Senoko Dr	KJ Group Consultants	ACM Contracting Pte Ltd		2018
46	Industrial Park @ 243 Alexandra rd		CHK Sanitary / Deluge E&C		2018
47	Shophouse @ Chinatown- Smith St	ZPT Engineering Services	J.Keart Alliances Pte Ltd		2017
48	A&A Fire Work @ Paya Ubi Industrial Park		K.B.C Engineering Pte Ltd		2019
49	10 Blk of industrial building @ Tuas South Boulevard	Surbana Jurong	Deluge Fire Protection Pte Ltd		2019
50	4 sty factory extension (A&A) @ 23 Senoko South Rd	Azuri Enginers Pte Ltd	Dactt Engineers Pte Ltd		2018
51	10 sty of serviced Apts & shops @ 2 Serangoon Rd	KTP Consultants Pte Ltd	Yew Seng Heng		2018
52	Factory at Changi North		S&P System Services Pte Ltd		2019
53	Factory 6 sty Bedok Food City	Surbana Jurong	King Wan Construction Pte Ltd / Tong Loong Engineering Pte Ltd		2018
54	2 Warehouse 3&7 sty (JTC Logistics Hub)	Meinhardt (Singapore) Pte Ltd	Nam Fang Co Pte Ltd		2018



No.	Project	M & E Consultants	Plumber	Units	Year of Completion
55	Warehouse at Pasir Panjang	Soilbuild Group Holdings Pte Ltd	Fitterlab Engineering Pte Ltd		2018
56	6 sty office at 5 Science Park Dr	J Roger Preston (s) Pte Ltd	Fitterlab Engineering Pte Ltd		2018
57	2-8 sty Showroom (Wearnes Automotive Showroom)	Team Design Architects Pte Ltd	Chan Weng Wah Engineering Pte Ltd		2018
58 59	Sport Centre @ Yuan Ching	Zarch Collaboratives Pte Ltd	NTH Construction Pte Ltd		2018
60	Tuas Incineration @ Tuas South Ave 2		J.Keart Alliances Pte Ltd		2019
61	3 sty Factory @ Tuas South Link 3	Gims & Associates aka GIMS Engineering Pte Ltd	Yew Seng Heng		2019
62	5 sty Factory Building @ Kranji Way	Engineers Alliances	Dactt Engineers Pte Ltd		2019
	Bungalow				
1	Bungalow @ 14 Jalan Nipah		Pitney		2015
2	96 Jalan Bumbung		G & C		2015
3 4	5 Pearl Hill Road 63 Paya Lebar Crescent		FT Plumbing M-stars		2015 2015
5	41 Princess of Wales		LW Plumping		2015
6	3 Tanglin Hill		BSL Builders		2015
7	Transit Rd		Nam Fang		2017
8	Ridout Rd		Nam Fang		2017
9	8th sty Factory Kensington Park Bungolow		Chan Weng Wah Hardware		2019
	Hotel		0.444		2015
1	Hotel @ 32 North Canal Road	Flood Associatos	C.K Lim 2		2015
2	Hotel @ 700 Beach Road	Elead Associates	Yong Tat		2015
3	Hotel A&A project - water system		Hong Lam		2018
	Shopping Mall	A Cincorne Die Lad	ANC Division C	260	2010
1	Yishun North Point City	Aecom Singapore Pte Ltd	ANS Plumbing & Sanitary Pte Ltd	268	2018
2	Yishun North Point Bus Depot LTA		ANS Plumbing & Sanitary Pte Ltd		2018
3	NTUC @ Toa Payoh		VSD Engineering Pte Ltd		2018
4	5 Towers of Suntec City		Millennium Plumbing		2019
5	Centrium Square	DP Engineers Pte Ltd	Nam Fang Co Pte Ltd	339	2018
	School				
1	ST Joseph's Institution	Surbana International Consultants Pte Ltd	Teck Hien Engineering		2018
2	2-6 Storey building Waterway Primary School	Rankine & Hill (S) Pte Ltd	Teck Hien Engineering		2017
3	Dover court International school		Chan Weng Wah Hardware		2018



No.	Project	M & E Consultants	Plumber	Units	Year of Completion
4	A&A to existing 6th storey Central Library including existing 4th & 5th storey connection to existing 7th storey Central Library of the NUS	Beca Carter Holling & Ferner (S.E.Asia) Pte Ltd	Millennium Plumbing		2018
5	XingHua Primary School		Chan Weng Wah Hardware		2018
6	YangZheng Primary School		Chan Weng Wah Hardware		2018
7	ZhenHua Primary School		Chan Weng Wah Hardware		2018
1	Military Nee Soon Camp (A&A)		ANS Plumbing & Sanitary Pte Ltd		2017
2	246 Piccadilly / 323A Lorong Kebasi	Defence Science & Technology Agency	Northway Fire Protection Pte Ltd		2018
3	Military Facilities	Aedas Pte Ltd	Northway Fire Protection Pte Ltd		2019
4	Police Station @ Geylang NPC	Gims & Associates (aka GIMS Engineering Pte Ltd)	NTH Construction Pte Ltd		2018
	Church				
1 2	5 Storey of Church building @ Tah Ching Road 4 sty Mosque (Masjid Angullia)	M&P Consulting Conteem Engineers Pte Ltd	Chan Weng Wah NTH Construction Pte Ltd		2017 2018
1	<u>Prison</u> Changi Prison @ Upper Changi Road North	CPG Consultants	MEC Engineering Pte Ltd		2017
1	Transportation MRT - Thomson Line Civil Contract T210	Gammon Construction Limited	Deluge Fire Protection Pte Ltd		2019
2	Irrigation system for flyover at MC01, SR03 & SR04		Ngee Chin Engineering Pte Ltd		2019
3	Thomson Line MRT T207 stage 1&2 (8 stations)	T Y Lin International	Deluge Fire Protection Pte Ltd		2019
4	T218 Thomson Line Stage 3 (13 Stations)	T Y Lin International	Deluge Fire Protection Pte Ltd		2019
5	KPE / CTC - TR286, Alarm Gong Fire System		Fab-5 Pte Ltd		2019
1	Shipyard Tuas South Shipyard	Sebana Jurong	Deluge Fire Protection Pte Ltd		2019
1	Hospital Woodland Intergrated Health Campus at	Surbana Jurong Consultants	King Wan Construction		2019
2	Woodland Ave 12 Nursing Home Upgarde (Moral Home for the Aged Sick Limited)	Pte Ltd CPG Consultants Pte Ltd	Pte Ltd NTH Construction Pte Ltd		2018



No.					Year of
91	Project	M & E Consultants	Plumber	Units	Completion
	Miscellaneous				
1	Park Upgrading	Tan Consultants	NTH Construction Pte Ltd		2018
2	Changi Water Reclamation Plant - Contact C22B	CPG	Deluge Fire Protection (SEA) Pte Ltd		2020
3	SP Power Station @ Harbour Dr		J.Keart Alliances Pte Ltd		2019
4	Showroom 2-8-sty (Wearnes Automotive Showroom)	Team Design Architects Pte Ltd	Chan Weng Wah Engineering Pte Ltd		2019