

OUTLINE SPESIFIKASI MATERIAL

PEKERJAAN : STRUKTUR

PROYEK : GEDUNG PENDIDIKAN PROFESI TERPADU UIN WALISONGO SEMARANG

TAHUN : 2025

NO	URAIAN PEKERJAAN	DESKRIPSI BAHAN / SPESIFIKASI / MATERIAL	TKDN (%)	MERK YANG DIPILIH KONTRAKTOR
1	Pekerjaan Persiapan	1. Theodolite		
		2. Waterpass		
		3. Tugu Patokan Dasar - Bahan Baja, diangkur ke beton		
		4. Papan Dasar Pelaksanaan - Bahan Kayu Kasau Meranti 5/7		
		5. Pekerjaan Penyediaan Alat Pemadam Kebakaran		
2	Pekerjaan Tanah	1. Pekerjaan Pengurugan Pasir Alas Fondasi - Pasir urug bersih	Lokal	
3	Pekerjaan Beton	1. Semen Portland	Holcim	83,74%
			Indocement	82,35%
			Semen Gresik	86,00%
		2. Coral	Lokal	
		3. Pasir beton	Pasir Muntilan (Gn. Merapi)	
		4. Bekisting - Multipleks tebal: 12 mm, untuk kolom, balok, pelat, sloof, pilecap	Lokal	
		5. Beton readymix - fc. 30 Mpa untuk pilecap, tie beam, pelat lantai, kolom, balok, tangga, dinding beton - fc. 25 Mpa untuk bore pile dan dinding talud - Lantai Kerja beton fc.7,5 Mpa, t=5 cm	Jayamix	89,33%
			Tugu Beton	71,57%
			JKB	97,65%
			Varia UB	97,81%
		6. Bore Pile - Diameter 800 mm = 80 cm - Daya dukung ijin kedalaman 20 m = 158, 138 ton Test yang harus dilakukan - Test PDA = 2.5 x Daya Dukung Ijin = 395,345 ton - NDT dan PIT	Global Sakti Perkasa	
			Daha	
			Adhidoyo Lestari	
		7. Baja Tulangan - Untuk tulangan struktur harus menggunakan tulangan Ulir/Deform/Sirip: fy 420 MPa (BjTS 420 B warna merah) - Semua Baja Tulangan harus sesuai SNI 2052:2017 dan ada logo SNI - Dilakukan uji Tarik, berat, dan diameter	Master Steel	51,47%
			Krakatau Steel,	56,22%
			Lautan Steel	
			Gunung Garuda	
		8. Pelat Lantai - Wiremesh M8 - 150 - Mutu U-50	Krakatau steel	10,24%
			Master steel	49,71%
			Grand Elephant	
			Union Steel	55,00%
		9. Floor Hardener 5 kg/m2	Sika	
			Fosroc	
			Ultrachem	

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4	Pekerjaan Besi dan Baja	1. Besi tulangan - Diameter 8", 10", 12", 13", 16", 19", 22", 25" (Ulir ASTM 615M Gr 60, Polos ASTM 615M Gr 40) - L (60 x 60 x 6 mm) - Pengaku (D = 22 mm) - Penggantung (D12 mm)	Gunung Garuda Lautan Steel 52,83%	
			Krakatau Steel Master Steel 56,22%	
		2. Baja - ST 37 / ASTM A-36 / SS400 untuk Baja Profil dan Plat baja, ASTM A-53 (A) SCH 40 untuk pipa baja struktur - IWF (500 x 200 x 10 x 16 mm) - IWF (250 x 125 x 6 x 9 mm) - IWF (300 x 150 x 6,5 x 9 mm) - IWF (200 x 100 x 5,5 x 8 mm) - Sag Rod (Ø 12 inch, 12 mm) - Rod Bracing (Ø19 inch) - Gording CNP (150 x 50 x 20 x 3,2 mm) - Gording CNP (125 x 50 x 20 x 2,3 mm) - Trekstang (Ø16 inch) - Pipa SCH 40 (Ø3 inch)	Gunung Garuda Lautan Steel Krakatau Steel 60,76%	
		3. Bahan Las - E 70xx AWS	Nikko Kobelco Trusco 27,05%	
		4. Baut - High Tension Bolt - Angkur Baut M22, L=840 - Angkur Baut M20, L=400 - Angkur Baut M16, L=400 - Baut A325 M20 - Baut A325 M16	Dynabolt Ramset Fischer	
		5. Pelat - Sambungan (T = 10 mm + Pemasangan Pengelasan) - Sambungan (T = 8 mm + Pemasangan Pengelasan) - Base Plate (T = 12 mm + Pemasangan Pengelasan) - Stiffener (T = 8 mm + Pemasangan Pengelasan) - Plat Buhul (T = 8 mm + Pemasangan Pengelasan)		
		6. Pengecatan - Pengecatan Zincromate		
		7. Grouting Beton		
		8. Pemasangan Pipa PVC (Ø2 & Ø6 Inch)		
5	Pekerjaan Mini Pile	1. Pekerjaan Mini Pile (25 x 25 cm) - Pengadaan Tiang Pancang (25 x 25 cm) - Pemancangan Tiang Pancang - Pembobokan Tiang Pancang	Wika Beton Bosowa Beton Pionir Beton	

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PEKERJAAN : ARSITEKTUR

PROYEK : GEDUNG PENDIDIKAN PROFESI TERPADU UIN WALISONGO SEMARANG

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1	Mortar Semen Instan	1. Acian Dinding - Acian dinding beton internal dan eksternal	MU	91,89%	
			Eco mortar	65,82%	
			Sun mortar	84,21%	
			Ubond	-	
		2. Acian Dacrah Basah - Dinding kamar mandi - Acian Setebal 2-3 mm	SIKATOP	27,89%	
			LEMKRA	28,22%	
			ECO MORTAR	72,77%	
			PRO X		
		3. Perekat keramik - Pemasangan Homogeneous Tile, Batu granit, Granit atau batu alam lainnya	MU	70,43%	
			ECO MORTAR	66,70%	
			SUN MORTAR	74,60%	
			UBOND	-	
		4. Pekerjaan Tile Grout (nat lantai) - Pengisi nat lantai	MU	71,91%	
			ECO MORTAR	75,77%	
			SUN MORTAR	84,47%	
			UBOND	-	
		5. Pekerjaan Screed - Perataan lantai	MU	94,92%	
			ECO MORTAR	75,77%	
			SUN MORTAR	77,89%	
			LEMKRA	-	
		6. Pekerjaan Plesteran - Dinding bangunan - Plesteran setebal 15 mm	MU	86,53%	
			ECO MORTAR	75,77%	
			SUN MORTAR	86,00%	
			UBOND	-	
		7 Pekerjaan Perekat Bata Ringan - Dinding bangunan - Plesteran setebal 15 mm	MU	86,53%	
			ECO MORTAR	75,77%	
			SUN MORTAR	76,51%	
			UBOND	-	
2	Pasangan Batu Bata	1. Pekerjaan Pasangan batu bata - Dinding bangunan	sesuai SNI		
		2. Pekerjaan Pasangan bata ringan - Dinding bangunan - Ukuran : 600x200x100 mm - Kuat Tekan $\geq 4,0$ N/mm2	CITICON	86,22%	
			FOCON	85,07%	
			BRICON	85,56%	
3	Pekerjaan Lantai	1. Lantai Homogeneous tile - Homogeneous tile ukuran 60x60 cm, Polish - Homogeneous tile ukuran 60x60 cm, Unpolish - Homogeneous tile ukuran 40x40 cm - Homogeneous tile ukuran 30x30 cm, Polish - Homogeneous tile ukuran 30x30 cm, Unpolish	SUN POWER	79,00%	
			ROMANTILE	69,62%	
			VALENTINO GRESS	49,57%	
			TITANIUM		
		2. Plin lantai Homogeneous tile - Ukuran 10x40 cm - Ukuran 10x60 cm, Polish	SUN POWER	79,00%	
			ROMANTILE	69,62%	
			VALENTINO GRESS	49,57%	
			TITANIUM	-	
		3. Kualitas 1 Mutu permukaan: ISO 10545-2 Panjang, lebar, ketebalan: ISO 105452 Kelurusan sisi: ISO 10545-2 Kesikuan: ISO 10545-2 Type/seri sesuai petunjuk Konsultan Perencana/PPK/User			
		4. Pengisi Naat	MU	63,89%	
			GE		
			LEMKRA		
			ULTRACHEM		

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4	Pekerjaan Pelapis Dinding	1. Pekerjaan dinding Homogenous - Ukuran 30x30 cm, Polish	ROMANTILE	69,62%	
			VALENTINO GRESS	49,57%	
			TITANIUM	-	
5	Pekerjaan Partisi	2. Pekerjaan wallpaper - Bahan vinyl, waterproof, bertekstur			
		1. Pekerjaan partisi gypsum - Papan Gypsum tebal 12 mm finishing cat	JAYBOARD	30,34%	
			YOSHINO	27,48%	
			KNAUF	26,17%	
6	Pekerjaan Langit-Langit Plafond	2. Pekerjaan sekat partisi cubicle phenolic - Tebal 12mm - Termasuk kunci selot, engsel, kaki-kaki	WINAS	12,65%	
			SPOT MATRIX	-	
			TASE	-	
		3. Paper tape & Compound			
		1. Langit-langit gypsum board - Gypsum tebal 9mm - Rangka hollow 4x4 cm dan 4x2 cm - Penggantung logam galvanized suspension	JAYABOARD	30,34%	
			YOSHINO	27,48%	
			KNAUF	26,17%	
			KENCANA	30,34%	
			SAKTITRUSS	-	
			EKG	-	
		2. Langit-langit gypsum water resistant - Gypsum tebal 9mm - Rangka hollow 4x4 cm dan 4x2 cm	JAYABOARD	30,34%	
			YOSHINO	27,48%	
			KNAUF	26,17%	
			KENCANA	30,34%	
			SAKTITRUSS	-	
			EKG	-	
		3. Langit-langit akustik gypsum - Ukuran 60x120 cm, tebal 9 mm - Penggantung Akustik	JAYABOARD	30,34%	
			KNAUF	26,17%	
			AMSTRONG	-	
			KNAUF	59,21%	
			AMSTRONG	-	
			JAYABMF	57,72%	
		4. List plafond shadowline aluminium - Bahan: Galvanized - Tebal: 0.4 mm (BMT) - Tinggi: 10 mm - Lebar: 30 mm	APLUS	63,94%	
			JAYABOARD	58,91%	
			KNAUFF	41,89%	
		5. Perkuatan Plafon - Lipped Channel 100 x 50 x 20 x 2.3mm - Plat besi 8 mm	GUNUNG RAJA PAKSI		
			KRAKATAU STEEL		
			LAUTAN STEEL		
		6. Compound gypsum	APLUS	88,20%	
			JAYABOARD	45,41%	
			KNAUFF	44,80%	
7	Pekerjaan Pengecatan	1. Cat Dasar Alkali Resist	DULUX	60,56%	
			JOTUN	54,87%	
			MOWILEX	55,02%	
		2. - Cat dinding dalam, plafond interior,; - Akrilik termodifikasi, cat berbahan dasar air/waterbased, rendah VOC, bebas APEO dan bahan berbahaya	DULUX	17,13%	
			JOTUN	43,24%	
			MOWILEX	59,47%	
			PROPAN	54,66%	
		3. - Cat dinding luar, plafond ekterior, lisplank: - Cat Weather resistance/perlindungan terhadap cuaca, 100% cat akrilik, cat berbahan dasar air/waterbased, perlindungan terhadap UV, anti Jamur, menurunkan temperature dengan merefleksikan sinar matahari menjauh dan menghentikan pembentukan panas. Performa warna 8 tahun.	DULUX	37,99%	
			JOTUN	50,99%	
			MOWILEX	55,02%	
			PROPAN	42,24%	
		4. - Cat besi anti karat - Cat enamel/minyak berbahan dasar alkyd, anti-korosi, low-odour, anti jamur, 100% bebas timbal & mercury	DULUX	49,85%	
			JOTUN	17,52%	
			MOWILEX	-	
			PROPAN	35,29%	
		5. - Semua pekerjaan dikerjakan oleh aplikator yang ditunjuk oleh principle.			

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		- Sebelum melaksanakan pekerjaan pengecatan, kontraktor harus membuat mock up terlebih dahulu dengan media minimal ukuran (1 x 1) m. - Warna/tekstur harus disetujui PPK/ Tim Teknis/Owner/Konsultan Manajemen Konstruksi/Konsultan Perencana dengan dibuatkan Berita Acara.			
	Pekerjaan Kusen, Pintu, Jendela	1. Kusen, Jendela dan Daun pintu UPVC (garansi 10 tahun)	LEAD DOOR	43,63%	
			CONCH	55,36%	
			FALKEN	75,42%	
		2. Kusen, Daun pintu besi emergency - Tebal 50 mm, plat baja, rockwool density 120kg/m3	KUPPE	58,46%	
			MAXDOOR	68,59%	
		3. Daun Pintu dari kaca - Tebal 10-12 mm	FORTRESS	-	
			KUPPE	58,46%	
			MAXDOOR	68,59%	
		4. Pintu Folding - Tebal 80 mm + rockwool density 60kg/m3, rangka hollow	FORTRESS	-	
			KUPPE	58,46%	
			DORMA	78,08%	
8	Pekerjaan Penggantung, Handle, Kunci	1. Engsel Kupu - Kupu - Nylon ring, bahan stainless steel/UPVC	DEKKSON	78,08%	
			EURO QUEEN	25,18%	
			BOUYU	46,32%	
		2. Engsel Friksi	DEKKSON	78,08%	
			EURO QUEEN	25,18%	
			BOUYU	46,32%	
		3. Lockcase - Bahan stainless steel/UPVC	DEKKSON	78,08%	
			EURO QUEEN	25,18%	
			BOUYU	46,32%	
		4. Kunci Tanam - Stainless Steel/UPVC	DEKKSON	78,08%	
			EURO QUEEN	25,18%	
			BOUYU	46,32%	
		5. Door Closer - Bahan Stainless Steel/UPVC	DEKKSON	78,08%	
			EURO QUEEN	25,18%	
			BOUYU	46,32%	
		6. Rambuncis - Stainless Steel/UPVC	DEKKSON	78,08%	
			EURO QUEEN	25,18%	
			BOUYU	46,32%	
9	Pekerjaan Kaca dan Cermin	1. Kaca dan cermin - Kaca cermin 5mm - Kaca non tempered 5mm	MULIA	65,97%	
			ASAHIMAS	49,72%	
			SAINT GOBAIN	-	
		2. Kaca tempered - Kaca tempered 12mm	MULIA	53,99%	
			ASAHIMAS	65,62%	
			SAINT GOBAIN	-	
		3. Syarat mutu sesuai dengan SNI 150047-2005 tentang kaca lembaran			
		4. Dimensi dan jenis kaca yang digunakan sesuai dengan gambar kerja			
10	Pekerjaan Atap	1. Penutup atap sistem pengunci - Atap metal gelombang, tebal 0,45 mm BMS - Warna merah / ditentukan kemudian - Bentang efektif 90-100 cm	BLUESCOPE LYSAGHT	56,34%	
			FUMIRA	52,78%	
			KENCANA ROOF	60,73%	
			MAHA SPANROOF	51,54%	
		2. Isolator panas - Aluminium foil bubble	INDOFOIL	56,64%	
			TERA FOIL	-	
11	Pekerjaan Sanitair	1. Closed duduk	THERMOTEC	-	
			TOTO	41,15%	
			AMERICAN STANDART	26,69%	
		2. Closed duduk difabel	KOHLER	47,86%	
			TOTO	41,15%	
			AMERICAN STANDART	26,69%	
		3. Washtafel - Meja	KOHLER	47,86%	
			TOTO	41,15%	
			AMERICAN STANDART	33,08%	
		4. Floor drain - Ukuran 3", bahan stainless steel 304	KOHLER	48,41%	
			TOTO	41,15%	
			AMERICAN STANDART	50,62%	
		5. Urinoir set - Termasuk kran	KOHLER	-	
			TOTO	41,15%	
			AMERICAN STANDART	50,62%	

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		KOHLER	-	
		6. Paper holder		
		7. Hook stainless steel		
12	Pekerjaan Railing	1. Baut	ASTM A-307	
		2. Tambatan		
		3. Railing stainless steel	BAJA NUSANTARA	
		- Pipa Stainless Steel Ø 2" tebal 1.5 mm	BLUE STAR	29,54%
		- Pipa Stainless Steel Ø ½" tebal 1.2 mm	BAKRIE	56,32%
		- Plat Stainless 3 mm		
		- Endpipe Stainless Steel		
		4. Angkur Baut Ø10 mm	HILTI	57,29%
			RAMSET	66,44%
			Mr, SAFETY	
		5. Railing hollow		
		- Ukuran 40 x 40 mm, tebal 1,6 mm		
		- Ukuran 40 x 60 mm, tebal 1,8 mm		
13	Pekerjaan Fasad	1. Dinding Panel tempel (terakota)	PHOMI	-
		- Ukuran 238 x 58 mm, tebal 2-3 mm	REDSTAR	
		- Perekat Sealant Perekat / Mortar perekat	FLEXIWALL	
		2. - Sunshade (conwood)	INSEE	-
		- Ukuran 150mm x 3000mm x 11mm	SHERA BOARD	-
			DUMA	-
		3. GRC cetak 10 mm + besi tulangan	Lokal	
		4. - Lipped Chanel 100x50x20x2.3mm	GUNUNG RAJA PAKSI	
			KRAKATAU STEEL	
		- Besi Siku 40x40x4 mm	LAUTAN STEEL	
		5. Angkur Baut Ø12 mm	HILTI	57,29%
			RAMSET	66,44%
			Mr, SAFETY	
		6. - Aluminium composite panel (ACP) PVDF 0.5 Alloy 5005 Perforated	DEKKSON	63,81%
		- Rangka hollow aluminium, uk. 40x40x1 & bracket siku , uk. 40x40x3 (finishing zinchromate)	ALUMUTALEC EVO	40,13%
		- Stiffener	MACO	75,03%
14	Pekerjaan Signed	1. Material Akrilik	Lokal	
		- Dimensi dan gambar/Tulisan sesuai gambar kerja		
15	Pekerjaan Sealant	1. Sealant	DOWSEAL	
		- Netral sealan	GE	42,62%
		- Non Acid	IKASEAL	40,15%
16	Pekerjaan Lain-Lain	1. ACP	DEKKSON	
		- Tebal 0,3 mm	ALUMUTALEC	40,44%
		- PVDF (EKTERIOR), non FR	MACO	76,43%
		2. Paving block	CISANGKAN	93,71%
		- Tebal 8 cm f'c 25 Mpa	KH BETON	78,22%
			MASTER BLOCK	
		3. U ditch	PRIMA BETON	71,87%
		- Ukuran 30x30 cm, f'c 30 Mpa	NUSANTARA BETON	75,12%
			WIKA BETON	72,04%
			KH BETON	76,35%
		4. Grill tutup saluran		
		- Bahan besi siku 40x40 mm + plat strip		
		- Bahan plat beton tebal 5 cm, f'c 30 Mpa		
		5. Waterproofing		
		- Bahan membran bakar tebal 3mm, garansi 10 tahun		

OUTLINE SPESIFIKASI MATERIAL

PEKERJAAN : MEP (MEKANIKAL-ELEKTRIKAL-PLUMBING)
 PROYEK : GEDUNG PENDIDIKAN PROFESI TERPADU UIN WALISONGO SEMARANG
 TAHUN : 2025

NO	URAIAN PEKERJAAN	DESKRIPSI BAHAN / SPESIFIKASI / MATERIAL	TKDN (%)	MERK YANG DIPILIH KONTRAKTOR
LISTRIK ARUS KUAT (LAK)				
1	Pekerjaan Distribusi Listrik Tegangan Menengah	1. Kubikel Tegangan Menengah (TM) Incoming : LBS + Lightning Arrester - Switch (LBS) and Earthing Switch - Three-phase busbars - CIT Operating Mechanism - Voltage presence indicator - LSC2A - Connection Pads for Dry-Type Cables - 3 x Lightning Arrester	Schneider Electric	34,86%
			ABB	21,09%
			Siemens	-
		2. Kubikel Tegangan Menengah (TM) Outgoing : Circuit Breaker + Digital Power Meter - Fluarc SF1 Circuit Breaker 24 kV ; 16 kA ; 400/630 A - Motorize (geared motor, closing coil, opening coil, anti pumping, aux contact) - Current Transformer ARM3 3 pcs. - Voltage Indicators - Busbar 630 A 3 unit - Heater 50 W, 220 VAC - Shunt Trip 220 VAC 50 Hz - Disconnector & Earthing Switch with SF6 gas Technology - RI circuit breaker operating Mechanism - CS disconnector operating Mechanism - Auxiliary Contact on circuit breaker - Downstream Earthing Switch - Voltage Transformer x 3 - Sensor suhu (Easergy TH110) dan kelembaban (Easergy CL110) - Substation monitoring device (Controller dan HMI) - LV Compartment - Powermeter PM5560 (for power management & tele control) - Relay proteksi Easergy P3U30 - (50/51 over current ; 50N/51N ground fault ; 46 unbalance & double setting protection) - Control Relay & Communication Modul : Modicon M221 220Vac (for power management & tele control) - Modul Komunikasi RS485 - Eksternal/Backup Power Supply	Schneider Electric	34,93%
			ABB	18,41%
			Siemens	-
		3. Kabel Listrik Tegangan Menengah - Tegangan : 24 KV - Jenis : N2XSY, N2XSEBY - Catatan : - Kabel Tegangan Menengah Dipersyaratkan Tanpa Sambungan	Extrana	84,55%
			Kabel Metal Indonesia,	85,48%
			Kabelindo	-
			Jembo	66,34%
		4. Terminasi Kabel Listrik Tegangan Menengah - Tegangan : 24 KV, Jenis : Heat Shrink	Raychem	-
			3M	-
2	Pekerjaan Distribusi Listrik Tegangan Rendah	1. Transformator Distribusi - Oil Immersed Transformator, 400 KVA, Cu-Cu, Dyn5	Trafindo	39,87%
			B&D	53,34%
			Weltraf	57,50%
		2. Panel Listrik - Panel LVMDP Tipe : Free Standing Form : 2B Bahan : Plat Besi, Finishing : Powder Coating, Tebal Plat : 1,6 mm - Panel Distribusi Tipe : Free Standing / Wall Mounted Form : 2B	PT. Omni Electrindo	-
			Delta Jaya Engineering	-
			Sinar Metrindo Perkasa	52,08%
			Jogya Mitra Panel	-

Bahan : Plat Besi, Finishing : Powder Coating, Tebal Plat : 1,6 mm			
3. Box MCB Listrik - Inbow	Schneider Electric	-	
	ABB	-	
	Siemens	-	
4. Kapasitor Bank	Schneider Electric	-	
	ABB	-	
	Nokian	-	
5. AMF Module - Tipe : Digital, Include : Protection Device	Deep Sea	-	
	Woodward	-	
6. ATS (Automatic Transfer Switch) - 4 Pole			
7. Relay-relay Proteksi (Control Relay)	Schneider Electric	-	
	ABB	-	
	Siemens	-	
8. Digital Power Meter	Schneider Electric	-	
	ABB	-	
	Siemens	-	

		14. Kabel Listrik Tegangan Rendah - Multicore NYFGBY	Extrana	85,11%	
			Kabel Metal Indonesia	92,05%	
			Kabelindo	-	
			Jembo	-	
		15. Kabel Listrik Tegangan Rendah - Tahan Api - FRC	Kabel Metal Indonesia	74,63%	
			Extrana	-	
			Jembo	-	
		16. Kabel Grounding - BCC, NYA, NYY	Extrana	-	
			Kabel Metal Indonesia	-	
			Kabelindo	-	
			Jembo	99,95%	
		17. UPS - Back Up Time : 30 Menit Pada Pembebanan 50% s.d. 60%	DV	-	
			APC	40,00%	
			Vektor	-	
		18. Panel Listrik Ruang Operasi (PP.OK) - OT Panel lengkap dengan : Modul Monitor dan Isyarat, Trafo Isolasi Medis	DV	-	
			Schneider Electric	-	
			Bender	-	
3	Pekerjaan Rak Kabel	1. Rak Kabel - Tipe : Ladder dan Tray - Bahan : Galvanis - Finishing : Powder Coating	NPS	-	
			Venindo tray	-	
			Nifang	-	
			Duta listrik	-	
4	Pekerjaan Penerangan & Stop Kontak	1. Downlight LED - Tipe : Inbow	Philips	21,23%	
			Opple	-	
			YLI	-	
			Scarto	-	
		2. Spotlight LED - Tipe : Inbow	Philips	-	
			Opple	-	
			YLI	-	
			Scarto	-	
		3. Recessed LED (Panel Light) - Ukuran : 600 x 600 mm, 1200 x 300 mm	Philips	-	
			Opple	-	
			YLI	-	
			Scarto	-	
		4. Lampu Baret LED - Tipe : Outbow	Philips	-	
			Opple	-	
			YLI	-	
			Scarto	-	
		5. Lampu TL LED Balk Oval (Bambu) - Tipe : Outbow	Philips	-	
			Opple	-	
			YLI	-	
			Scarto	-	
		6. Lampu Indirect - Lampu : LED Strip	Philips	-	
			Opple	-	
			YLI	-	
			Scarto	-	
		7. Lampu Exit - Lampu : TL LED	Philips	-	
			Opple	-	
			YLI	-	
			Scarto	-	
		8. Nicad Battery - Minimal : 2 Jam	Superled	-	
			Everexceed	-	
			Artalux	-	
		9. Saklar - Tipe : Standar	Schneider	-	
			Boss	-	
			Panasonic	44,51%	
		10. Stop Kontak - Tipe : Standar	Schneider	-	
			Boss	-	
			Panasonic	42,31%	
		11. Kabel Instalasi Penerangan - NYM 3x2,5 mm2	Extrana	95,47%	
			Kabel Metal Indonesia	-	
			Kabelindo	-	
			Jembo	87,43%	
		12. Kabel Instalasi Stop Kontak - NYM 3x2,5 mm2	Extrana	95,47%	
			Kabel Metal Indonesia	-	
			Kabelindo	-	
			Jembo	87,43%	

		13. Pipa Conduit Instalasi - PVC High Impact	Clipsal	-	
			Boss	88,09%	
			Pipamas	-	
		14. Cable Mark	CABS	-	
Legrand	-				
3M	-				
5	Pekerjaan Genset	1. Genset 400 KVA - Generator lengkap dengan engine, alternator, panel genset dikopel oleh Pabrikan dengan dilampirkan COO dan COM - Kapasitas : 650 KVA Prime Power - Tipe : Silent - Pendingin : Radiator - Bahan Bakar : Solar - Sudah termasuk : - Panel Kontrol Starter Genset - Pipa Knalpot, lengkap dengan kotak sampel keluaran knalpot - Alternator : - Output : 650 KVA Prime Power - Tegangan : 380 - 415 Volt - Frekuensi : 50 Hz - Power Factor : 0,8	Genset : Perkins	54,23%	
			Cummins	40,00%	
			Yanmar	47,20%	
			Alternator : Stamford		
		2. Ducting Exhaust Radiator Genset - BJLS	Fumira	-	
			Lokfom	-	
		3. Elastomeric Rubber : Lapisan Untuk Ducting Radiator Genset - Elastomeric Rubber	Armaflex	-	
			Thermabreak	-	
			Thermoshield	-	
		4. Aluminium Sheet : Lapisan Untuk Ducting Radiator Genset - Double Sided Fire Retardant	Polyfoil	-	
			Thermo Foil	-	
		5. Circuit Breaker Panel Listrik - MCCB, MCB	Schneider Electric	26,56%	
			ABB	-	
			Siemens	-	
		6. Kabel Listrik Tegangan Rendah - Tegangan : 0,6/1 kV (NYY, NYFGBY)	Extrana	99,19%	
			Kabel Metal Indonesia	92,05%	
			Kabelindo	97,51%	
			Jembo	92,52%	
		6	Pekerjaan Penyalur Petir	1. Air Terminal - Elektrostatik	EF
Pulsar	-				
LPI	-				
FF	-				
2. Down Conductor - Coaxial Tegangan Tinggi 2 x 50 mm2	First			-	
	DCE			-	
	Heliac			-	
	Liteco			-	
3. Electroda Pembumian - Polymer Inspection Pits / Bak Kontrol - 5/8" Rod Coupling - 5/8" x 2000 mm Extensible Copperbond Rod - Rod Cable Clamp - 5/8" Drive Stud					
LISTRIK ARUS LEMAH (LAL)					
7	Pekerjaan Fire Alarm	1. MCFA Konvensional, 10 Zones	Protector	-	
			Hooseki	-	
			Onfire	-	
		2. Annunciator Panel (zona area), indikasi adanya sistem sprinkler yang - Memiliki indikator audio berupa buzzer - Memiliki indikator visual berupa colour graphic - Dilengkapi fasilitas button untuk silence dan reset, tombol lamp test, dan tombol buzzer test	Protector	-	
			Hooseki	-	
			Onfire	-	
		3. Remote Booster Power Supplies Expands dalam kabinet. Kabinet harus mampu - Terminal gauge: 12 to 18 AWG (0.75 - 2.5 mm2) - NAC Wiring Styles: Class A or Class B	Protector	-	
			Hooseki	-	
			Onfire	-	

		4. Terminal Box - Bahan : plat baja tebal 1,2 mm - Finishing : cat warna merah	Lokal		
		5. Fixed Heat Temperature Detector - Konvensional - Tipe : Konvensional - Working Temperature : 55° - 60° C	Protector Hooseki Onfire	- - -	
		6. Photoelectric Smoke Detector - Konvensional - Tipe : Konvensional	Protector Hooseki Onfire	- - -	
		7. Manual Call Point, Lengkap Dengan Fireman's Intercom Outlet - Tipe : Manual Push Button	Protector Hooseki Onfire	- - -	
		8. Alarm Bell - Desibel Rating : 85 dB di jarak 3 meter - Anti Karat	Protector Hooseki Onfire	- - 40,00%	
		9. Indicator Lamp	Protector Hooseki Onfire	- - -	
		10. Kabel Instalasi - FRC Shielded 2 Pair - FRC 3x2,5 mm2 - FRC 2x2,5 mm2 - FRC 2x1,5 mm2 - NYA 10 mm2 - NYA 1,5 mm2	Extrana Kabel Metal Indonesia Kabelindo Jembo 	99,19% 92,05% 97,51% 92,52%	
		11. Pipa Conduit Instalasi - PVC High Impact	Legrand Boss Pipa mas, Vinilon	89,19% 88,09% - 89,72%	
		12. Cable Mark	CABS Legrand 3M	- - -	
8	Pekerjaan Tata Suara	1. Power Booster Amplifier	TOA Bosch Honeywell	34,24% - -	
		2. Ceiling Speaker (Ruang Umum) - 3 Watt	TOA Bosch Honeywell	39,70% - -	
		3. Volume Control / Attenuator	TOA Bosch Honeywell	- - -	
		4. Kabel Instalasi - NYMHY	Extrana Kabel Metal Indonesia Kabelindo Jembo	99,19% 92,05% 97,51% 92,52%	
		5. Pipa Conduit Instalasi - PVC High Impact	Legrand Boss Pipa mas, Vinilon	89,19% 88,09% - 89,72%	
		6. Cable Mark	CABS Legrand 3M	- - -	
		7. Rack - Termasuk set power distribution (outlet stop kontak) dan fan	Indorack ABBA	- -	
9	Pekerjaan Jaringan Telepon	1. Outlet Telepon - Tipe : Flush & Jack	SCHNEIDER BOSS PANASONIC	31,29% 38,00% 15,00%	
		2. Kabel Instalasi Outlet Telepon - ITC 2x2x0,6 mm	EXTRANA BELDEN SYSTIMAX	86,40% 14,32% 92,59%	
		3. Kabel Antar Terminal Box - ITC Multipair	EXTRANA BELDEN SYSTIMAX	94,19% 14,32% 83,95%	
		4. Kabel Tanah Jaringan Telepon - Jelly Armoured	EXTRANA BELDEN SYSTIMAX	94,19% 14,32% 83,95%	

		5. Pipa Conduit Instalasi - PVC High Impact	LEGRAND	89,19%	
			BOSS	38,00%	
			PIPA MAS	38,37%	
			VINILON	81,08%	
		6. Cable Mark	CABS	61,04%	
			LEGRAND	89,19%	
			3M	52,26%	
10	Pekerjaan Jaringan Data dan Wifi	1. Distribution Switch Data - Switch Layer 2 (Manageable) 48 Ports - Uplink Interfaces : Minimal 2 SFP - Full POE+	Unifi,	-	
			TP-Link,	-	
			D link	-	
		2. Outlet Data - RJ45, Kelas Produk : Premium	SCHNEIDER	31,29%	
			BOSS	38,00%	
			PANASONIC	15,00%	
		3. Wifi Access Point - Dual Band 2,4 GHz / 5 GHz - 802.11ac - Kecepatan : 300 Mbps - POE (Power Over Ethernet)	UNIFI	40,00%	
			TP-LINK	35,91%	
			D LINK	33,19%	
		4. Kabel Data - UTP Cat.6, STP Cat.6	BELDEN	14,32%	
			COMSCOPE	40,00%	
			SPECTRA		
		5. Kabel Fiber Optic - UTP Cat.6, STP Cat.6	SYSTIMAX	81,40%	
			COMSCOPE	14,32%	
		6. Pipa Conduit Instalasi - PVC High Impact	LEGRAND	89,19%	
			BOSS	38,00%	
			PIPAMAS	38,37%	
			VINILON	81,08%	
		7. Cable Mark	CABS	61,04%	
			LEGRAND	89,19%	
			3M	52,26%	
		8. Rack Termasuk set power distribution (outlet stop kontak) dan fan	INDORACK	64,72%	
			ABBA		
11	Pekerjaan MATV	1. Antena UHF	Irco, Ikusi, Triax	-	
		2. Head End, Amplifier	Irco, Ikusi, Triax	-	
		3. Splitter / Tap Off	Irco, Televese, Koovik, Ikusi	-	
		4. Outlet TV	SCHNEIDER	31,29%	
			BOSS	38,00%	
			PANASONIC	15,00%	
		5. Kabel Instalasi - Coaxial RG 6, Coaxial RG 11	BELDEN	14,32%	
			COMSCOPE	40,00%	
			SPECTRA		
		6. Pipa Conduit Instalasi - PVC High Impact	LEGRAND	89,19%	
			BOSS	38,00%	
			PIPAMAS	38,37%	
			VINILON	81,08%	
		7. Cable Mark	CABS	61,04%	
			LEGRAND	89,19%	
			3M	52,26%	
		8. Rack - Termasuk set power distribution (outlet stop kontak) dan fan	INDORACK	64,72%	
			ABBA		
12	Pekerjaan CCTV	1. NVR (Network Video Recorder) - Kapasitas : 16 / 32 Channel - Video Mode : IP Camera Input (D1, 720p, 1080p) 16 - Video-Out Monitor : Composite, VGA, & HDMI 1920x1080) - Recording Speed : Min. 15 fps per Channel Scheduled Recording - LAN : Gigabit Ethernet (RJ45) Keyboard (Option)	HIKVISION	37,30%	
			DAHUA	-	
			UNIVIEW	-	
			HUNTEC	-	
		2. HDD (Hard Disk Drive) - 4 TB, Transfer Rate : 150 MB/s	WD	-	
			SEAGATE	-	
			TOSHIBA	27,60%	
		3. TV Monitor - 32"	LG	41,42%	
			SAMSUNG	28,80%	
			SONY		

		4. Switch Data - Switch Layer 2 - Kapasitas : 16 Ports - POE+ - Uplink interfaces : 2 SFP	HIKVISION	37,30%	
			DAHUA	-	
			UNIVIEW	-	
			HUNTEC	-	
		5. IP Dome Camera indoor with IR - 1/3" 1.3 Megapixel MOS Sensor - H.264 & MJPEG dual-stream encoding - 25/30fps@1.3 M(1280 × 960) & 25/30fps@720P(1280 × 720) - Day / Night (IR), AWB, AGC, BLC - Max. IR LEDs length 20 m - 2.8 mm / 3.6 mm / 6.0 mm fixed lens - IP66 rated water and dust resistant. Compatible with IEC60529 measurement standard. - PoE	HIKVISION	37,30%	
			DAHUA	-	
			UNIVIEW	-	
			HUNTEC	-	
		6. IP Box Camera indoor with IR - 1/3" 1.3 Megapixel MOS Sensor - H.264 & MJPEG dual-stream encoding - 25/30fps@1.3 M(1280 × 960) & 25/30fps@720P(1280 × 720) - Day / Night (IR), AWB, AGC, BLC - Max. IR LEDs length 20 m - 2.8 mm / 3.6 mm / 6.0 mm fixed lens - IP66 rated water and dust resistant. Compatible with IEC60529 measurement standard. - PoE	HIKVISION	37,30%	
			DAHUA	-	
			UNIVIEW	-	
			HUNTEC	-	
		7. IP Box Camera Outdoor with IR - 2 Megapixel MOS Sensor - H.264 & MJPEG dual-stream encoding - 25/30fps - Day / Night (IR), AWB, AGC, BLC - Max. IR LEDs length 30 m - 3.6 mm / 6.0 mm / 8.0 mm fixed lens with IEC60529 measurement standard. - PoE	HIKVISION	37,30%	
			DAHUA	-	
			UNIVIEW	-	
			HUNTEC	-	
		8. Kabel Instalasi - UTP Cat.6	BELDEN	14,32%	
			COMSCOPE	40,00%	
		9. Pipa Conduit Instalasi - PVC High Impact	LEGRAND	89,19%	
			BOSS	38,00%	
			PIPAMAS	38,37%	
			VINILON	81,08%	
		10. Cable Mark	CABS	61,04%	
			LEGRAND	89,19%	
			3M	52,26%	
		11. Rack - Termasuk set power distribution (outlet stop kontak) dan fan	INDORACK	64,72%	
			ABBA	-	
PLUMBING (PL)					
13	Pekerjaan Plumbing	1. Paket Pompa Transfer Air Bersih - Jumlah Pompa : 2 unit - Tipe : Vertical Multi Stage Centrifugal Pump - Operasional : Otomatis (1 Duty, 1 Standby) - Lengkap dengan : Panel Kontrol Otomatis dan Supporting	GROUNDFOSS	23,21%	
			EBARA	37,68%	
			TEVYN	23,30%	
			VERSA	24,83%	
		2. Paket Pompa Booster Air Bersih - Jumlah Pompa : 2 unit - Tipe : Vertical Multi Stage Centrifugal Pump - Operasional : Otomatis (1 Duty, 1 Standby) - Lengkap Dengan : Panel Kontrol Otomatis, VSD, Pressure Tank, Baseplate, Header, dan Supporting	GROUNDFOSS	12,72%	
			EBARA	39,44%	
			TEVYN	23,30%	
			VERSA	24,83%	
		3. Circuit Breaker Panel Kontrol Pompa - MCCB, MCB	SCNAIDER	27,79%	
			ABB	67,31%	
		4. Komponen Panel Kontrol Pompa - Fuse, Pilot Lamp, Trafo CT, Ampere Meter, Volt Meter, KWH Meter, Selector Switch, Magnetic Contactor, Push Button, DOL Starter, Variable Speed Drive (VSD)	SCNAIDER	27,79%	
			ABB	67,31%	

		5. Kabel Listrik Pompa - NYY	EXTRANA	86,40%	
			KABEL METAL	83,94%	
			KABELINDO	83,95%	
			JEMBO	94,24%	
		6. Katup-katup dan Aksesoris : Gate Valve, Ball, - Class PN-16/10K sampai dengan diameter 2” material Brass/Bronze Body - Diameter 2,5” ke atas material Cast Iron	RISER		
			WEFLO	26,75%	
			MICO		
		7. Fleksibel Connection - Tekanan 10 bar	MURALEX		
			TOZEN	55,03%	
			PROCO		
		8. Water Meter	ONDA	61,42%	
			ACTARIS		
			AMICO	51,99%	
		9. Level Switch	WATT	41,26%	
			SINGER		
		10. Pressure Gauge - Tekanan 15 bar	NAGANO		
			WIKA		
			VPG	20,40%	
		11. Pressure Switch - Tekanan 15 bar	NAGANO		
			WIKA		
			VPG	20,61%	
		12. Pipa Air Bersih & Fitting - PPR PN 10	RUCIKA	56,99%	
			WESTPEX	52,84%	
			SD		
			ONE ADD		
		13. Pipa Air Kotor (Sewage), Pipa Air Bekas Toilet (Toilet Drain) - PVC Kelas AW 10 Bar / Non Toxic	RUCIKA	87,03%	
			PIPAMAS	55,09%	
			POWER		
		14. Pipa Air Bekas Pantry (Pantry Drain) - PVC Kelas AW 10 Bar / Non Toxic	RUCIKA	87,03%	
			PIPAMAS	55,09%	
			POWER		
		15. Pipa Vent - PVC Kelas AW 10 Bar / Non Toxic	RUCIKA	87,03%	
			PIPAMAS	55,09%	
			POWER		
		16. Pipa Air Hujan - PVC Kelas AW 10 Bar / Non Toxic	RUCIKA	87,03%	
			PIPAMAS	55,09%	
			POWER		
		17. Fitting PVC - Class 10 Bar	RUCIKA	87,03%	
			PIPAMAS	55,09%	
			POWER		
		18. Hanger Rod - Galvanis	Lokal		
		19. Clamp - Galvanis	Lokal		
		20. Clean out	ANTASAN	42,24%	
			KHARISMA		
			ONDA	61,42%	
		21. Roof Drain - Double drain	ONDA	61,42%	
			SANEI		
			SOLIGEN		
		22. Rooftank - FRP	TOYA	46,41%	
			BIOTECH	46,39%	
			PENTAIR	45,03%	
PEMADAM KEBAKARAN (PMK)					
14	Pekerjaan Peralatan Pemadam Kebakaran	1. Electric Hydrant Pump	EBARA	39,44%	
			VERSA	24,83%	
			CNP		
		2. Panel Kontrol - Electric Hydrant Pump	EBARA	39,44%	
			VERSA	24,83%	
			CNP		
		3. Diesel Hydrant Pump	VERSHA	24,08%	
			TORISHIMA	46,25%	
			EBARA	40,22%	
		4. Engine - Diesel Hydrant Pump	VERSHA	24,08%	
			TORISHIMA	46,25%	
			EBARA	40,22%	
		5. Panel Kontrol - Diesel Hydrant Pump	VERSHA	24,08%	
			TORISHIMA	46,25%	
			EBARA	40,22%	
		6. Jockey Hvdrant Pump	EBARA	34,00%	

	GROUNDFOSS	12,72%	
	CNP		
7. Panel Kontrol - Jockey Pump	EBARA	31,49%	
	GROUNDFOSS	25,69%	
	CNP		
8. Hydrant Pillar - Baja Tuang, Tipe : Two Way	EBARA	31,49%	
	GROUNDFOSS	25,69%	
	CNP		
9. Hydrant Box - Indoor uk: 800 x (1100-1250) x 200 mm - Outdoor uk: 660 x 950 x 200 mm - Lengkap dengan fire hose, machino coupling, variable jet spray	Guardall		
	Ocean Fire		
	SRI		
10. Siamesse Concection - Ukuran : 1000 x 65 x 65 mm - Free Standing - Jenis coupling Machino Coupling	Guardall		
	Ocean Fire		
	SRI		
11. Pipa Instalasi Hydrant & Sprinkler - Black Steel Schedule 40	SPINDO	59,87%	
	BAKRIE	53,82%	
12. Pengecatan - Lapisan cat dasar (prime coating) dan lapisan cat akhir	JOTUN	17,52%	
	ORICE		
	ATLANTIC OCEAN	32,25%	
13. Fitting Draad - Tipe : Galvanis, standard jis B2301 - Temperatur Maks. : 20 C - Tekanan Kerja Maks. : 20 Bar	SGP		
	JZ		
	RICON		
	TSP	46,75%	
14. Fitting Las - Tipe : Galvanis, standard jis B2301 - Temperatur Maks. : 20 C - Tekanan Kerja Maks. : 20 Bar	SGP		
	JZ		
	RICON		
	TSP	46,75%	
15. Gate Valve Pada : - Bagian Suction Pompa Hydrant - Bagian Discharge Pompa Hydrant - MCV Sprinkler - Tipe : OS&Y	Riser,		
	Yuta,		
	B&R,		
	Mico		
16. Gate Valve - Class 16 K	Riser,		
	Yuta,		
	B&R,		
	Mico		
17. Check Valve - Class 16 K	Riser,		
	Yuta,		
	B&R,		
	Mico		
18. Strainer - Class 16 K	Riser,		
	Yuta,		
	B&R,		
	Mico		
19. Pressure Switch - 0 sampai 20 bar	Potter Electric,		
	Nagano,		
	Mico		
20. Pressure Gauge - 0 sampai 20 bar	Potter Electric,		
	Nagano,		
	Mico		
21. Main Alarm Valve - Class 16 K	TYCO		
	DUYARD		
	WEFLO	26,75%	
	PROTECTOR		
22. Pressure Reducing Valve - Class 16 K	OCV		
	DANFOSS		
	WEFLO	28,91%	
	MICO		
23. Hydrant Valve - Class 16 K	Riser,		
	Yuta,		
	B&R,		
	Mico		
24. BCV (Branch Control Valve) set - Class 16 K	TYCO		
	DUYARD		
	WEFLO	26,75%	
	PROTECTOR		

		25. Test drain & sight glass - Class 16 K	Tyco, Viking, Dutard		
		26. Automatic Air Vent - Class 16 K, Cast Iron	Yoshitake, Amstrong, Samyang, Fanal		
		27. Flow Switch	Potter Electric, Nagano		
		28. Tamper Switch	Potter Electric, Nagano		
		29. Head Sprinkler	Tyco, Viking, Protector		
		30. Fire Extinguisher - Tipe ABC 3,5 Kg - Tipe CO2 5 Kg - Tipe CO2 25 Kg	Guardall, Ocean fire, Hooseki		
TATA UDARA GEDUNG (TUG)					
15	Pekerjaan Unit	1. Unit AC - Jenis Single System	DAIKIN LG PANASONIC POLYTRON TOSHIBA GREE CARRIER	10,61% 22,13% 40,49% 41,77% 15,02%	
		2. Unit AC - Jenis multi System - VRV/VRF system	DAIKIN LG PANASONIC POLYTRON TOSHIBA GREE CARRIER		
		3. Ceiling Exhaust Fan - Low Noise	CONEXA PANASONIC KRUGER	59,07%	
		4. Exhaust Fan Tipe Ducting - Inline Direct Fan, Low Noise	CONEXA PANASONIC KRUGER	59,07%	
		5. Fresh Air Fan Tipe Ducting - Inline Direct Fan, Low Noise	CONEXA PANASONIC KRUGER	59,07%	
		6. Unit Pressurized Fan - Centrifugal Fan	CONEXA PANASONIC KRUGER	59,07%	
16	Pekerjaan Pipa	1. Pipa Refrigerant AC - Bahan : Tembaga ASTM B280	DAIKIN KOIDO	10,61%	
		2. Pipa Drain AC - PVC AW	RUCIKA WAVIN LESSO	56,99% 48,49%	
		3. Isolasi Pipa AC - Elastomeric Rubber	Armaflex, Thermabreak, Thermoshield		
17	Pekerjaan Kabel	1. Kabel Instalasi Listrik AC - NYY dan NYM	EXTRANA KABEL METAL KABELINDO JEMBO	86,40% 83,94% 83,95% 94,24%	
		2. Pipa Conduit Instalasi - PVC High Impact	LEGRAND BOSS PIPA MAS VINILON	89,19% 38,00% 38,37% 81,08%	
		3. Cable Mark	LEGRAND BOSS	89,19% 38,00%	