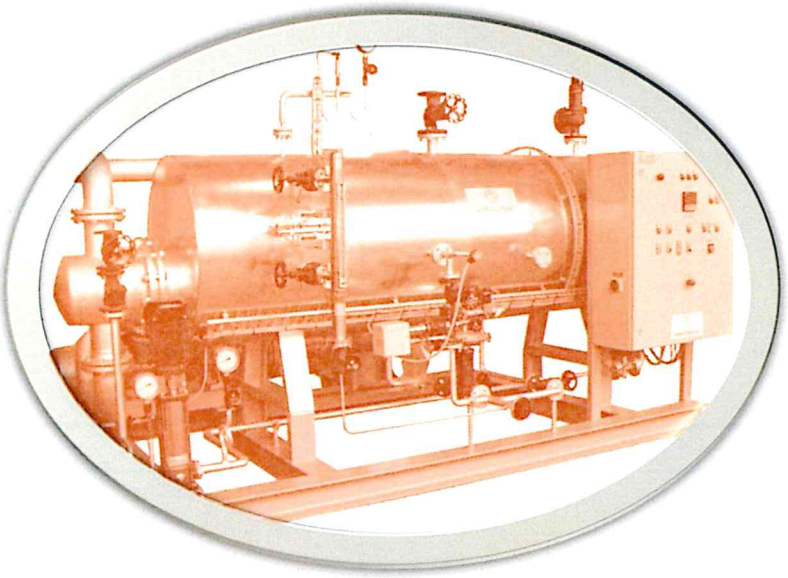
Temiz Buhar Jeneratörü
6 ton/saat



PANAGRO TARIM HAYVANCILIK GIDA SAN. VE TİC.A.Ş.
Ofis: Dede Korkut Mah. Beyşehir Cad. No:9 Meram/KONYA
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TEMİZ BUHAR JENERATÖRÜ TEKNİK ŞARTNAMESİ
CLEAN STEAM TECHNICAL SPECIFICATION

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M.SARI

Y. HAYTA

1. *AMAÇ / PURPOSE*

Panagro Tarım Hayvancılık Gıda San. Ve Tic. AŞ'nin yardımcı tesislerine ilave 6 ton saat steril buhar ünitesi alımı ve otomasyon dahil anahtar teslim kurulumunu kapsamaktadır.

NOT: Tank alımı ve Proses ayrı tekliflendirilebilir ve şartnamenin ilgili kısımlarını bağlar.

2. KAPSAM / *SCOPE OF SUPPLY*

2.1. 6 t/sa Steril buhar ünitesi / *6t/hr Clean Steam Units*

2.1.1. PLC/HMI SCADA bağlantılı system / *PLC-HMI System with SCADA connection*

2.1.2. Su ve buhar enstrümanları(gösterge, transmitter, sviç, vanalar vs.) / *Steam and water instruments such as termometers/manometers, transmitters, switches, valves e.t.c.*

2.1.3. Degazör sistemi 102-103°C / *Degassing system at 102-103 °C*

2.1.4. Isı değiştirici / *Heat exhanging*

2.1.5. Güç ve kontrol kabini / *Control and electrical cabinets*

2.1.6. Buhar ve su filtreleri(0.2 mikron steril su filtresi dahil), kondenstop ve pompalar, / *Steam and water filters(0,2 micron water filter should be included), Condense stops, and pumps*

2.1.7. Elektrik ekipmanları / *Electrical equipments*

2.1.8. Sistem izolasyonu / *System isolations*

2.2. Nakliye ve ambalaj indirme süpervizörlü tedarikçiye ait olup; indirme için vinç Panagro tarafından tedarik edilecek / *Transportation and packaging should be a scope of supplier with supervision of off-loading and Crane shall be supplied by Panagro for off-loading.*

2.3. Ekipmanları yerine konulması ve terazilenmesi / *Erection of the machine and leveling.*

2.4. Elektirik ve mekanik montaj beslemeden kontrol panosuna kadar, kablolama ve tavalama ve saportlama / *Assembly both electrical and mechanical*

2.5. Devreye alma ve kabul / *Start up and Commissioning*

- *I/O Tests of the Connections (vendor supply)*
- *Assistance to PANAGRO technicians during wiring of the components inside Electric Boards supplied by Contractor*
- *Operation Tests*
- *Final testing at the presence of PANAGRO technicians*

2.6. Eğitimler ve dökümantasyon bkz. Kısım 17 / *Training and documentation see ch.17*

2.7. Otomasyon (HMI ve PLC Scada bağlantılı) / *Automations (Scada and PLC with SCADA output)*

2.7.1.1. PLC kurulumu için tüm gerekli malzeme tedariki / *Supply of material for PLC Implementation,*

2.7.1.2. Elektrik şemalarının güncellenmesi, Kablo Listesi */Realization of Electric Schemes and list of cables,*

2.7.1.3. Mevcut SCADA ya ekran bilgilerinin (kazan dairesine) taşınması / *Modification and/or a new of Scada (Screen view on current scada at steam boiler),*

2.7.1.4. Lisanslar/*Licence*

2.7.1.5. Uzak bağlantı /*Remote axcess*

2.8. Elektrik ve otomasyon uygulamaları (haberleşme, sinyalizasyon ve I/O kabin input/ output elemanları dahil / *Electrical and automation applications thah include communication, signalization and I/O cabinet input/output materials should be included.*

2.9. Mühendislik / *Engineering*

2.10. Teknik Dökümantasyon / *Technical Documentation*

2.11. Genel harcamalar ve seyahatler / *General Expanses and travelling*

3. TEKLİF SAHİBİNİN SORUMLULUĞU / *BIDDER RESPONSIBILITY*

İş bu ihale anahtar teslimi esasına göre yapılacağından, Teklif sahibi, işin ve bütün kısımlarının iyi işlemesi ve birinci sınıf bir imalat yapılması şartlarını bütün detaylarıyla karşılamakla yükümlüdür. Teklif sahibi işin ihale şartnamesinde tanımlanan sistemin projelendirilmesinden, gerekli tüm mühendislik hesap ve kontrollerini yapmaktan, tatbikat proje ve çizimlerini hazırlamaktan, temin etmekten ve uygulamaktan tümü ile sorumludur. *Hereby the tender shall be based on a turn key sollution, the bidder company solelly responsible a first class manufacturing which cover all parts. All engineering described in technical specification and application/implementation with their sollutions and preparation of projects are responsibility of the bidder company.*

Şartnamede tüm sistem ve ekipmanlar ile ilgili bahsedilen hususlar ile çalışma şekilleri bir fikir vermesi için tarif edilmiştir. *All details and working principles shall be described in the technical specification to give an idea to the bidder company.*

Teklif sahibi, hazır tedarik edilmiş Temiz buhar ünitesi için istenilen entegrasonu ve otomasyonu, istenilen standartlarda ve kapasitede ürün transferini sağlayıp, bölüm 9 da belirtilen kapasite ve diğer detaylara göre teklif vermekle sorumludur. *Clean steam unit shall comply of all required standard and capasity, a bidder company is responsible to cover all requirements, i.e. capasities and standards in his proposal according to chapter 9.*

Tüm sistemdeki makine ve ekipmanların; yurt içi ve/veya yurt dışı tüzük-yönetmelik ve standartlarına, işe ve mahallerine ve günümüz teknolojisine uygun olarak en üst düzey ve en kaliteli bir şekilde temin ve tesisi hususu tamamen firmanın sorumluluğundadır. Bu nedenle teklif sahibi firma daha güvenli ve sağlıklı bir çalışma şeklini gerçekleştirmek amacıyla önerilerini teklifine Teknik Ekibinin onayını almak koşulu ile ekleyebilecektir. *Offer should covers all required international rules and regulations as well as local ones and also todays Technologies shall be implemented at highest level and quality which shall be sole responsibility of the company. The company shall be requested his suggestion for a better secure and healty environment and work compansation by confirmation of technical team of the Panagro.*

Her türlü fiyat artımı talepi kabul edilmeyecektir. İşin tamamına verilen bedel geçerli olacaktır. / *Any price increase or demands shall be rejected after a signage of the contract.*

M. SARI

4. GENEL TANIMLAMA / *GENERAL DESCRIPTIONS*

4.1. Giriş / *Introduction*

Panagro Tarım Hayvancılık Gıda San. ve Tic. A.Ş.(bundan böyle **PANAGRO** olarak adlandırılacaktır) ekli listede belirtilen ürün ve ekipmanların teminini bu teknik şartnamede belirtilen esaslara göre yapacaktır. Teklif Sahibi (bundan böyle FİRMA olarak adlandırılacaktır) ekli listede belirtilen ürün ve ekipmanları teknik şartnamede belirtilen esaslara göre yapacaktır. *These machines and equipments for **Panagro Tarım Hayvancılık Gıda San. ve Tic. A.Ş.**(hereinafter **PANAGRO**) described in equipment list shall be supplied according to this technical specification. Proposal (hereinafter **COMPANY**) described in equipment list shall be manufactured and or designed according to this technical specification.*

"Firmalar, verilen alan üzerine yerleşim planları sunacaklar. Teklifler arasında Uygulamada farklılıklar olması durumunda Panagro Teknik Ekibi ihtiyaç olursa teklif güncellemesi istemek üzere bilgi veya doküman verecektir. " Company shall be sumitted his layout on given drawing. In case of differences between different applications, Panagro's technical shall request an update and to recive an update by giving a new technical documents.

"Proje ve şartnamede belirtilmeyen teknik hususlar, eksiklikler ve yapılması teknik zorunluluk gerektiren işler idarenin öngöreceği ve işin tekniğine uygun şekilde yapılacaktır. Proje, teknik şartnamede çelişen teknik hususlar ortaya çıkması halinde idarenin öngöreceği doküman esas alınacaktır. Proje ve şartnamelerde olmayan ancak teknik olarak yapılması zorunlu imalatların teklifi fiyat içerisinde yer alacaktır." Any details, inadequacies which are not described in this technical documents shall be done according to technical obligation administration approval. Compulsory productions shall be included in the price that cover the contradictions between Project and this technical specification.

4.2. Teknik Ekip Ve Kontak Bilgileri / *Technical Respondent And Contract Details*

Teknik Ekibe sorulacak veya onay alınacak tüm konularda ilk tercih edilecek iletişim yöntemi "Elektronik Posta" dir. Soruların ve ürün teknik onaylarının yazılı olarak yapılması tercih edilmektedir. *Questions and approval inquiries shall be submitted to technical team via electronic post. Any questions and technical approval inquiries shall be done in written form.*

İş bu ihale PANAGRO Teknik Ekip İnceleme Sorumlusu ve İletişim Bilgileri;

Hereby this tender PANAGRO technical team responsibilities and communication info;

ABH Satın Alma Müdürlüğü,

Tel : +90.332.324 03 53
E-Posta : info@abholding.com.tr;

Panagro Tarım Hayvancılık Gıda San. ve Tic. A.Ş.Teknik Danışma,

Tel : +90.332.224 24 24
Mustafa SARI / Yasin HAYTA /Bülent KILIÇ
E-Posta : mustafasari@panagro.com.tr
: yasinhayta@panagro.com.tr;
: bulentkilic@panagro.com.tr;

M. SARI

5. PROJE TEKNİK YETERLİLİK KRİTERLERİ / *PROJECT TECHNICAL COMPETANCE CRITERIAS*

PANAGRO Teknik inceleme birimlerince yeterlilik kontrolü yapılacak tekliflerin teknik incelemede yeterlilik alması için gerekli kriterler aşağıda belirlenmiştir. ***"Bu kriterleri yerine getiremeyen firmaların teklifleri değerlendirme dışı bırakılıp ikili proje sunum görüşmelerine çağrılmayacaktır." Panagro gerekçe göstermeksizin istediği firmayı çağırıp çağırmamakta serbesttir. Panagro technical evaluation shall be done accoding to following techical competance which described below. Companies which shall not met the criterias their proposals shall taken out from evaluation and shall not be invited to bilateral discussion. Panagro shall not invite any company without any reason.***

5.1. İhaleye girecek FİRMALARIN ihale konusu işte yeterlilik göstermeleri gerekmektedir. Bu yeterlilik ihale konusu işte işi yaptığı kurum tarafından tam yeterlilik almış gıda işletmelerinde en az ve üç TEMİZ BUHAR ÜNİTESİNİ geçtiğimiz beş yıl içerisinde tamamlamış olmasıdır. Müşteriden onaylı iş bitirme belgesini dosyaya ekleyecektir. / *Canditates should supply competance certificate of tender subject. This certificate should cover Cleam Steam Units should be succesfully complete with in five years. Certificate of completions which shall be approved from customer should be added to the file.*

5.2. Ayrıca; firmalar teklifleri eklerinde teminleri yapılacak ürünler ile bu ürünlerin uygulamaları için ilgili yasalara uygunluğu konusunda taahhütname vereceklerdir. Ürünler ile birlikte, gerekli tüm ürün kalite sertifikalarını tedarik edip ihale dosyası ekine koyacaklardır. *Moreover, companies should give written angagement competence for relevant laws. All certificates of products shall be added to tender file.*

6. TEKLİF DEĞERLENDİRME KRİTERLERİ / *PROPOSAL EVALUATION CRITERIAS*

Teklifler değerlendirilirken aşağıdaki parametreler kapsamında değerlendirme yapılacaktır. *When offers shall be evaluated, following parameters should be taken into consideration.*

6.1. Teknik Şartnamenin tüm sayfalarını paraf ve son sayfasını firmanın imza yetkilisi tarafından imza ve şirket mühürü ile kabul edilecektir. Bu parametre olmaması durumunda diğer maddelere bakılmaksızın teklif değerlendirme dışı kalacaktır. *This technical specification should be signed by initial for each page and signed and stamped for last page for autorized person. Incase this is not achieved, this proposal shall be dismissed.*

6.2. Şartname ile verilen teklif arasında teknik detaylarda(perfromanslar vs.) farklık varsa yüklenici firma teklifi kontrata dâhil ettirip imzalatsa bile teknik şartname esas alınacak olup proje kabulü teknik şartnamaye göre yapılacaktır.
/ In case of discrepancies between the offer and technical specification (i.e. condutions, performance e.t.c.) the technical specifation will take into account as acceptance referance even the offer included as is and signed as part of contract.

6.3. Teklifte alternatif yerleşim çizimleri, Detaylı birim fiyat, işin tamamı için en ucuz fiyat. Yeterlilik kriterinin mevcudiyeti olmalıdır. *Alternate layouts, detailed unit prices, and best summarrized discounted price Existence of availability of competence criteria shall be supplied.*

M. SARI

6.4. Şartname kabulü olmasına rağmen tekliflerinde şartname uygunsuzluğu bulunması durumunda firma şartnameye uygun hareket etmek zorundadır.(Şartnamede belirtilmeyen hususlar hariç). *In spite of approval of technical specification proposal shall not match the specification (that does not cover items in the specification).*

6.5. En düşük enerji tüketimli motorlar, en verimli makina ekipman teklifi. (işin teslimi sürecinde performans testlerinde, düşük tüketim tekliflerinden kaynaklanan yetersizlikler tespit edilmesi durumunda Son hak edişten işin bedelinin %10 iş giderilse dahi ödenmeyecektir. 1 ay içerisinde giderilmemesi durumunda Panagro tarafından Firmanın namı hesabından temin edilerek problem giderilecek, kesin teminat mektubu irat kaydedilecektir.) *The lowest electricity consumption of motors, inefficient machine and equipment offer (if these described during change over of authority at the commissioning, the last progress payment of 10 % will not be done even the problem has been solved) still occurs and not solved within a month, lost shall be balanced from the supplier company account and performance bont shall be registered as a revenue.*

6.6. Teslim tarihi (üretime başlama) kontratın imza edildiği tarihten itibaren altı(6) aydır, devreye alma ve kabul dahil. / *the changeover dates should be six(6)month after signage of the contract, i.e. st-up & commissioning should be included.*

7. PERFORMANS KRİTERLERİ / *PERFORMANCE CRITERIAS*

Tüm parametreleri içeren maddelerde karşılıklı müttabık kalınmalıdır.

All items parameters shall be agreed by both parties *Parameters (min / max)*

7.1.	Temiz buhar kapasitesi *Clean Steam capasity*	6ton/sa *6t/hrs*
7.2.	Temiz Buhar Basıncı *Clean Steam Pressure*	11 barg *11 barg*
7.3.	Isıtıcı Buhar Basıncı *Steam Heater Pressure*	16 barg *16 barg*
7.4.	Degazör Suyu Sıcaklığı ve basıncı	102-105 °C / 0,2 barg
7.5.	*Degasser water temperature and pressure*	*102-105 °C / 0,2 barg*

7.6. Dip blöfler için otomatik blöf vanası kullanılacaktır.
An automatic blow-off valve will be used for the bottom bluffs.

7.7. Sistem Start/Stop işlevi ekrandan verilebildiği gibi olası arızalarda Manuel olarakta sağlanabilmelidir.
The system Start / Stop function must be available on the screen or manually in case of possible malfunction.

7.8. Sistemin Basınç, Seviye ve alarm değerlerinin geçmişe dönük görülebilmesi sağlanacaktır.
The pressure, level and alarm values of the system can be seen in the past.

7.9. Sistem iletkenlik kalibrasyonunu otomatik yapacaktır. PANAGRO sistemi ayrıca Manuel olarak ölçüm yaparak kontrol edecektir.
The system will automatically calibrate the conductivity. The PANAGRO system will also be controlled by manual measurement.

7.10. Temiz buhar jeneratörü pik çekişlerde (6t/sa), basınç kaybı 1 (bir) bar ve altında olacak şekilde sisteme cevap verebilmelidir.
The Clean steam generator should be able to respond to the system at peak draws (6t / hr) such that the pressure drop is below 1 (one) bar.

7.11. Temiz Buhar Jeneratörü Kontrol panelinin Panagro Kazan dairesinden uzaktan takibi ve istenmesi halinde kontrolünün yapılabilmesi sağlanmalıdır.
Clean Steam Generator The control panel must be remotely controlled from Panagro boiler room and controlled if required.

7.12. Degazör besleme suyu için 0,2 mikron steril su filtresi kullanılacaktır.
0.2 micron sterile water filter will be used for the degasser feedwater.

7.13. Sistem basınç ve su seviyesi oransal olarak kontrol edilecektir.
System pressure and water level will be controlled proportionally.

7.13. Su ve temiz buhar tarafında kullanılan tüm basınç enstürmanları (gösterge,transmitter,svitchler vb.) hijyenik bağlantılı olarak temin edilecektir.
All pressure installations (indicators, transmitters, svitchers, etc.) used on the water and clean steam side will be supplied in hygienic connection.

7.14. Sistemi izolasyonlu olarak teslim edilecektir.
The system will be delivered as insulated.

M. SAKI

M. SARI

İşin Sonunda işin bedelinin %10 luk kısmı performans (ürün spesifikasyonlarında her istasyon için belirtilen buhar temizliği, iletkenlik, debi, basınç/sıcaklık ve sürede ilgili alana göre bu kısım ve 7. Kısımda belirtilen değerlerinin tutturulması) yani fonksiyonunu 1 hafta içinde aralıklı olarak sağlayacaktır. Sağlamaması (teklif değerlendirme kriterlerinin 6. Maddesi haricinde) durumunda 1 hafta sure verilecek, 1 hafta sonrasında testler tekrarlanacaktır. Yine de sağlanmaması durumunda geçen her gün için sözleşme bedelinin % 0,5 i her hafta için ceza kesilecektir. Bu oran maksimum % 10 olacaktır. Sağlanması durumunda %10 luk kısım serbest bırakılarak ödenecektir. Performansın sağlanmaması 1 ayı geçerse kesin teminat mektubu irat kaydedilerek, namı hesabından temin edilerek Panagro tarafından yaptırılacaktır. *At the end of the sesion % 10 of the job as performance bond values should be achieved which covered in this chapter and 7., specifications within a couple of times on a weel basis. If the conditions are not satisified rules in chapter 6. Shall be followed up. If the still conditions are the same % 10 shall be deducted from supplier balance and shall be taken as revenue and also % 0,5 penalty of the contract value shall be deducted from supplier account. This amount shall be maximum % 10 of the performance bond.*

İşin sonunda kesin teminat mektubu firma tarafından 1 yıl boyunca olmak üzere performans bondu ile yer değiştirilecektir. *After one year, 10 % performance bond shall be replaced with a value of 10 % with a fullfilled achievement.*

Şartname ile verilen teklif arasında teknik detaylarda(perfromanslar vs.) farklık varsa yüklenici firma teklifi kontrata dâhil ettirip imzalatsa bile teknik şartname esas alınacak olup proje kabulü teknik şartnamaye göre yapılacaktır. / ***In case of discrepancies between the offer and technical specification (i.e. condutions, performance e.t.c.) the technical specifation will take into account as acceptance referance even the offer included as is and signed as part of contract.***

8. PROJE TESLİM ve DÜZENLEME ŞARTLARI / *PROJECT SUBMITION and CONFIGURATION CRITERIAS*

Yüklenici, kendi program ve çalışma şeklini belirleyecek, uygulama projelerini hazırlayacaktır. Bunlar Panagroya teslim edilmelidir. Makinenin anahtar teslimi tarihini iş planında belirtilecektir. Tüm eğitim, makineler ve sistem testleri ile PLC yazılımlarının tamamının talep edilen teslim tarihidir. Teslim sürelerinin aşılması durumunda (Panagro'dan kaynaklanmayan nedenlerden dolayı) geçen her gün için sözleşme bedelinin % 1 i ceza kesilecek bu sure 1 ayı aşmayacaktır. Aşılması durumunda firmanın namı hesabından iş tamamlanacak, firmadan tahsil edilecek, kayıp zaman nedeni ile kesin teminat mektubu irat kaydedilecektir. *Contractor shall identify his time programme and application Project this should be submitted to Panagro. A turn key hand over date shall also be identified in this time plan. All training, machine and system tests, PLC programming and checks should be mentioned and achieved before this date. If this hand over tests are exceeded, 1 % penalty is valid for every date till one month limitation. In case of period over errors, Panagro may decide complete the job by written notice which will charge to the contractor account with a performance bonding that will be taken as revenue of Panagro.*

9. SPESİFİKASYON ve ARALIKLAR / *SPECIFICATIONS and RANGES*

Bakınız EK I

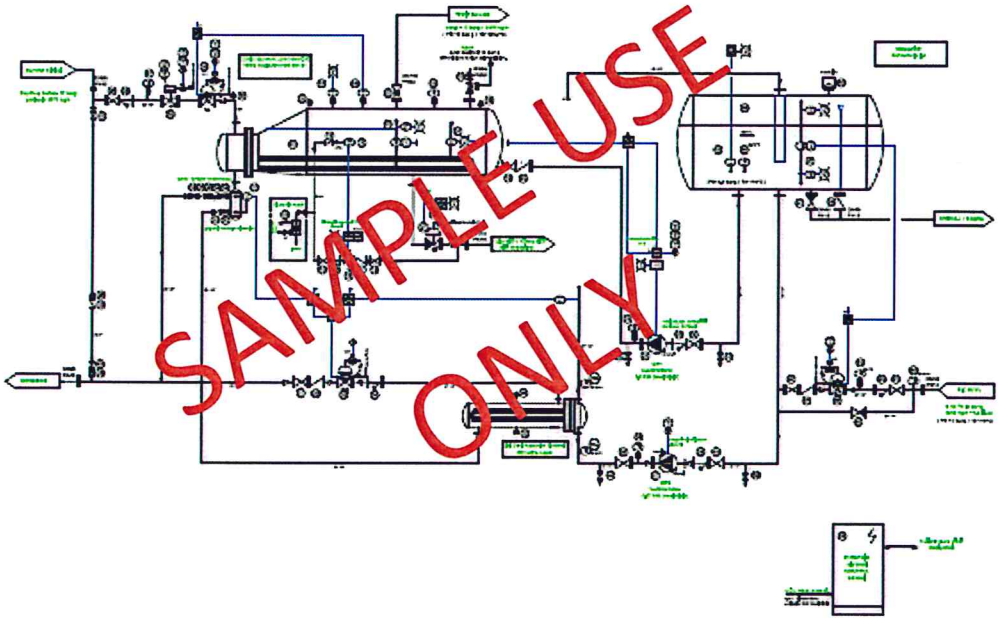
Eklerde bulunan spesifikasyon ve parametreler performans kriterlerinde bölüm 7 de dikkate alınacak olup, tüm oluşacak uygunsuz durumlar bölüm 18 e ticari ve teknik şartnameye göre hukuki zorunlulukların yerine getirilmesini sağlayacaktır.

See: ANNEXTURE I

Attached APPI, specification and parameters shall be established and all assigned specification range should be agreed by Panagro that shall be a criteria for chapter 7. Any inconveniance occurs supplier should be a solely responsible for chapter 18. And should achieve a requirement of commercial contract in terms of law.

10. TEDARİKÇİ ÇİZİMLERİ,MAKİNA DİAGRAMLARI / *SUPPLIER DRAWINGS, P&ID*

P&ID makine çizimleri herhangi bir işe başlamadan önce Panagro'nun ön onayına sunulmalıdır. / *P&ID's and filler drawings shall be supplied by vendor and should be approved by Panagro before progress starts.*



Örnektir. / *Sample use only*

11. YERLEŞİMLER / *LAYOUTS*

Tedarikçi tasarımı PANAGRO nun mevcut şartlarınıda dikkate alarak genel proses şartları ve standarlara göre tasarlanıp Panagro onayı alınmalıdır. *Shall be designed according to General rules and standart by considering current condution of Panagro that shall also be submitted and started after approval of Panagro.*

12. PROSES / *PROCESS*

Firma teklifinde ve/veya el kitapçığında proses uygulamasını açık bir şekilde tarif etmeli ve bu uygulama PANAGRO nun iş işleyişine uygun olmalıdır.

The company shall well decribe the process application in his offer and/or technical manuals that should be suitable PANAGRO's working conditions and agreed.

14. ENSTRÜMAN KONTROLÜ / *INSTRUMENTATION CONTROL*(AUTOMATION)

Bakınız Otomasyon Teknik Şartnamesi / *See technical specification for automation*

Sistemde ilgili ünitelerin ihtiyacı çerçevesinde paslanmaz çelikten imal Point I/O kontrol panoları yapılmalıdır. / *In case of system requirements Point I/O control pannel should be made of st. st..*

Sistemin çalıştırılması için mevcut endüstriyel pc *"integratör"veya alternatif PLC ve HMI çözümü Panagro da mevcuda göre anlatılarak* kullanılmalıdır. *Industrial PC " integrator and or alternatelly PLC and HMI sollution shall be described first and used at Panagro.*

Proses ile haberleşme sağlanmasında kullanılacak olan Point I/O kabinlerinde Allen-Bradey I/O modülleri bulunmalıdır ve bu panolar ile kuru kontak bağlantısı ile haberleştirilmelidir. / *Point I/O cabinet consist brand name shall be Allen Bradley or equivalent brand shall be used for process communication. This cabinet shall be connected via dry contact.*

Proseste kullanılacak olan tüm ürün vanaları direk kontak haberleşme teknolojisine sahip olmalıdır.. *All valves shall be used in process should comminicate with direct contact.*

Proseste kullanılacak olan tüm ürün vanaları açık ve kapalı pozisyon kontrolü sağlayan kontrol ünitelerine sahip olmalıdır. *Valves should have OPEN and CLOSE position control units.*

Pano içerisinde kullanılacak olan şalt malzemeler (Motor Koruma Şalteri, Sigorta, Röleler vb), buton-lamba ve frekans konvertörleri ABB, Siemens ve Telemecanque gibi 1.sınıf malzemelerden kullanılmalıdır.. Sistemdeki I/O'ler için Allen Bradley Point I/O veya muadili olmalıdır. / *Shalter equipments (i.e., motor protection relay, insurance, relays e.t.c.) that shall be used button lamb and frequence convertors which are first class equipments made of ABB, Siemens and Telemecanque. Allen Bradley shall be preferred for Point I/O's in system.*

Panoda Safety Röle yer almalıdır. Sistem kumandası 24VDC olacak şekilde donanıma sahip olacak olup, 24VDC için Phoenix SMPS'ler veya muadili kullanılmalıdır.
Safety relay should be in the cabinet. System control shall be 24 VDC. Phoenix SMPS's shall be used for 24 VDC.

Sistemin haberleşme alt yapısı için Siemens profibus kablosu ve 90 derece açılı programlama portu yer alan, ledli WIPA Profibus konektörleri veya muadili kullanılabilir.
Wipa with led profibus connector with a 90 degree programming port, siemens profibus cables or equivalent equipments, shall be used automation's communication infrastructure.

Pano içi ve sahada kullanılacak olan elektrik malzemeleri ve markaları aşağıdaki gibi olmalıdır:
The following main equipments that shall be used on side and in the cabinet;
o Schneider grubu acil duruş rölesi ve reset butonu / *Schneider immergency relay and reset button group*
o Festo ve/veya Burkert solenoid valf ve hava regülatörü / *Festo and/or Burkert selenoid valve and air regulator*
o Allen Bradley I/O kartları / *Allen Bradley I/O cards*
o IFM Direct contact-Master ve güç kaynakları *IFM direct contact Master and power card*
o Phoenix Contact Güç kaynakları / *Phoenix Contac Power Supply*

o Schneider grup motor koruma ve kontaktör grubu / *Schneider group motor and contactor group*
o Siemens hız sürücüler / *Siemens VSD, drivers*
o IP55 koruma sınıfına sahip pano, RITTAL/ LEGRAND / ABB (St.st.)
Cabinet with IP55 protection class RITTAL/ LEGRAND / ABB (St.st.)
o Phoenix Kontact röle / *Phoeniz Contact Relay*
o Schneider grup W-otomat / *Schneider group W otomat*
o Schneider grup muhtelif sarf malzemeleri / *Schneider group assorted consumables*

15. TASARIM / *DESIGN*

15.1. Proses Seçim / *Process Preference*

Sistem ve ekipman dizaynı aşağıdaki standartlar baz alınarak tasarlanmalıdır: *System and equipments should be designed according to following standards:* **EKİPMAN TASARIMI / *EQUIPMENT DESIGN***	**STANDART /*STANDARD***
Proses Tasarımı / *Proses design*	TSE & EN SS(Avrupa Normları–İsveç Standardı) CFR 211.63, 211.65, and 211.67 address, respectively, "Equipment design, size, and location," "Equipment construction," and "Equipment cleaning and maintenance."
Mekanik Tasarımı / *Mechanic Design*	TSE & EN SS(Avrupa Normları–İsveç Standardı)
Elektrik Tasarımı / *Electrical Desing*	TSE & IEC (International Electrotechnical Commission) & EN (Avrupa Normu)
Kontrol Sistem Tasarımı / *Control system Design*	TSE & IEC (International Electrotechnical Commission) & EN (Avrupa Normu)
Basınçlı Ekipman Tasarımı / *Pressurized vessel design*	TSE & EN SS (Avrupa Normları–İsveç Standardı) 97/23/EC direktifi
Hijyen Tasarımı/ *Hygiene Design*	Safety of machinery Hygiene requirements for the design of machinery ISO 14159:2002,
Buhar Kalitesi Tasarımı / Steam quailty desing	Culinary steam 21 CFR 173.310 by checking
Kaynak Tasarımı/*Welding Design*	Welding of Metalic materials EN 1011-3
İs güvenliği / *Work safety and compensation*	DIRECTIVE 2006:42 EC

Tedarikçi gereksinimlerine göre değişebilir. Bu durumda Panagro onayı istenmelidir. / *Shall be change according to bidder request. In this case needs Panangro approvals.*

15.1.1. Yazılım ve Simülasyon / *Software & Simulation*

TEDARİKÇİ proje müdürüne bağlı olan aşağıdaki yükümlülüklerden sorumlu en az bir(1) adet mühendis atamalıdır/ *SUPPLIER shall assign a site engineer who should bring responsibility for the following:*

Her iki taraf tarafından onaylanmış yerleşim ve proje PID'lerine göre düzenlenecek olan fonksiyonel analizler Proses yazılımının temelini oluşturacak olan fonksiyonel analizlerin her iki taraf tarafınca onaylanması Sonrasında otomasyon mühendisi temiz buhar prosesi yazılımlarının simülasyonunu gerçekleştirecektir. *After Clean steam process programming by automation engineer, simulation for*

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functional analysis that is the basis of programming shall be arranged according to following layout and P&ID that should be signed by both party.
TEDARİKÇİ yazılımın fonksiyonel analize göre yapıldığının kontrolünü simülasyon sırasında temiz buhar prosesi, alarm ve acil duruş parametrelerini aktif ederek kontrol etmek ile yükümlüdür. *SUPPLIER should make a consensus during simulation clean steam processing and alarm, emergency stop pareneters that should be activated and controlled.*

TEDARİKÇİ otomasyon mühendisi proje güç tüketimleri, kablolaması ve işin tamamlanmasından sorumludur. */ SUPPLIER's automation engineer is responsible for POWER CONSUMPTION, cabling and completion of duties.*

Program yazılımı ve simülasyonunu gerçekleştiren TEDARİKÇİ otomasyon mühendisi, proses mühendisi ile birlikte devreye almadan da sorumlu olacaktır. *Automation engineer with a process engineer shall be responsible for the start up.*

15.2.1. **Proses Kontrol / *Process Control***

Kontrol sisteminin başlangıcı ve çalışması sırasında öz sınama testleri gerçekleştirilmektedir. Öz sınama testleri sırasında kontrol sisteminin herhangi bir kısmında hata meydana gelirse, hata mesajı verilmektedir. */ System should automatically done during at start and run self test. If any error occurs during self test system should give an fault alarm.*

16. MONTAJ, KURULUM ve DEVREYE ALMA / *ASSEMBLY, START-UP and COMMISSIONING*

- Yatay ve düşey taşıma yükleniciye aittir. *Vertical and horizontal transfers should be belonged to supplier.*
- Kablolama, hava, gaz borulama projeye en yakın alana gelene kadar (panel üstü) ile sınırlandırılmıştır. Gerisi Panagro A.Ş. ye aittir. */ Cabling, air, r, gas pipings for supply is limited to nearest point i.e., over ceiling. The rest will be belong to Panagro A.Ş.*
- Tüm bağlantılar, devreye alma ve çalışma yüklenici firmaya air yüklenici firma tüm cihaz ekipmanları ve sistemlerini anahtar teslim edecektir. *The Contractor is solely responsible for all duties as a turn key Project till change over authority.*
- Operatör eğitimleri yükleniciye aittir. *Contractor should arrange training for enough qualification to run and maintenance the system where/when necessary before the job is compelete.*
- Montaj, devreye alma, kabul ve eğitime gelen personelin yol konaklama ve yemek(iş saatleri dışında) giderleri yükleniciye aittir. *All food i.e.(out of working hrs.) and accomodation during assembly, start up, commissioning and trainings belong to supplier account.*

Start-Up for process

- 21 CFR 173.310 : The firm must follow its filed scheduled process for bringing the equipment to a condition of Boiler water additives.
- **16.1. Ofis Elektrik Çalışmaları / *Office Electrical works***

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Elektrik servisi aşağıdaki tüm işler için gerekli olan saatleri karşılamaktadır/ *Electrical Service: should cover the followings;*

- Danışmanlık, Ekipman Tedariği, Kontrol ve Güç Kabini, Dış Kablolama / *Consultancy, equipment supply, control and power cabinets, external cablings*
- Hesaplamalar / *Calculations*
- Proje ve elektrik işleri zaman çizelgesinin takibi / *Time plan follow up for electrical prj.*
- Kablolama çizimlerinin yapılması / *Handling of cable drawing*
- Tüm teknik dosyaların hazırlanması / *Prepare all technical documentation*

16.2. Otomasyon Mühendisliği / *Automation Engineering*

Otomasyon mühendisliği aşağıdaki işlerin yapılması için gerekli olan saatleri kapsamaktadır / *automation engineering should cover following duties and woring hours:*

- Program yazılımı / *Programming*
- Gerekli toplantıların yapılması / *arrange necessary meetings*
- Proje ve otomasyon zaman çizelgesinin takibi/*project and automation time plan follow up*
- Tüm teknik dosyaların hazırlanması/ *prepare required all technical documentation*
- Bakım, üretim ve geçmiş kayıtların raporlanması /M*aintenance,* d*ream report, reporting/trending system*

16.3. Program Yazılımı / *Programming*

- Programlama için gerekli olan dokümanların hazırlanması ve gönderilmesi / *Prepare and transfer all necessary documentation*
- Müşteri ile program simülasyonun yapılması / *arrange simulation with customer*
- PC'nin endüstriyel ortama hazırlanması / *Prepare a PC for industrial ambiant*
- Kullanıcı bilgisayarların PC ile iletişiminin sağlanması/*arrange communication with user PC*
- Saha eğitimi / *arrange on site trainings.*
- Devreye alma sürecinde gerekli olan değişikliklerin yapılması ve güncellenmesi / *Update necessary changes during start up.*

16.1. Mekanik Montaj / *Mechanical Assembly*

Bu proje için gerekli olan insan optimize edilmelidir.. / *Manpower shall be optimized..*

Bu iş için tahmin edilen süpervizörlük süresi optimize edilmelidir. / *Manpower shall be optimized.*

Elektrik Kablolama / Electrical

Bu proje için gerekli olan insan gücü optimize edilmelidir. / *Manpower shall be optimized.*

Bu iş için tahmin edilen süpervizörlük süresi optimize edilmelidir. / *Supervision Manpower shall be optimized.*

16.4. Süpervizyon, montaj, devreye alma ve kabul / *Supervision and assembly, start up and commissioning;*

Tedarikçi montaj sırasında süpervizyon ve montaj ekibi hizmeti sağlamalıdır. Bu ekip problem ve istekleri çözebilecek yeterlilikte olmalıdır. *The vendor should supply supervisor and assembly team when required. This team should be capable of to solve the problems and inquiries.*

Bağlantı noktaları P&ID çizimlerinden gösterilecektir(kapsam). Sahada yapılacak tüm montaj teklif kapsamı içinde olup devreye almada teklif kapsamına dahil olmalıdır. Devreye alma için Tedarikçi bir elektrik ve bir mekanik teknisyeni görevlendirecektir. Montaj ve kabuldede minimum mühendislik seviyesinde temsil edilmelidir. Tüm bu işler için görevlendirilen kişilerin konaklama ve iaşe giderleri yüklenici firma tarafından karşılanacaktır. *Connection points should be described in P&ID's i.e. scope of supply. Supplier should be represented minimum one electric/automation and one mechanical personnel at start-up and should also represented minimum engineering level for assembly and commissioning. All accomodation, travel expances should be included in the price.*

17. EĞİTİM / *TRAINING*

Steril buhar üretimi, kullanımı ve bakımı, temizliği ile ilgili işletme ve bakımlarını kapsayan eğitim kursları verilecektir. Bu kapsam dâhilinde aşağıdaki konularda eğitim verilmelidir; *Trainings should be given for automation transfer system both for clean steam production, maintenance and cleaning. These should cover the followings;*

- Otomasyon sisteminin kapsamı / *Automation transfer systems (general)*

- Otomasyon transfer (Manuel çalıştırma modu, gerçek zaman modu, ölçüm kontrollü çalıştırma, PLC Kontrol özellikleri, uzaktan otomosyon, HMI ana ekran paneller, otomasyon ölçüm cihazları, kaçak ölçüm cihazları). Temizlik ve yangın riskleri tanımlanmalı ve kayıt altına alınmalıdır. / *To run automation transfer system, automation measurement, automation failure measurem ent equipment controlling, HMI screens and functions, , PLC interlocks and parameters as well as basic automation level for automation which cover manual and automatic runs shall be studied.*
- Neden analizi tüm bu eğitimler sırasında personele gösterilmelidir / *Trouble shooting analysis during all above training should be highlighted to the trainees.*

- Deneyimli acente teknisyeni tarafından otomasyon sistemi devreye alınırken, ilgili mühendis ve teknik elemanlara eğitim fabrikamızda verilecektir. / *AUTOMATION TRANSFER training should be given experienced trainee at Panagro's factory.*

- Acil durumlarda yapılması gerekenler nelerdir? *Emergency procedures/applications should be well described.*

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Yukarıdaki eğitimler tarafımızdan belirlenen ve listelenen personele verilecektir. / *All above training shall be given to our personnel according to our coise of determination that also be listed and given to supplier.*

İleride sistemin genişlemesi halinde ilave gelebilecek enstrümanların otomasyon sistemlerinin tanıtılması ve aktif çalışır hal kazandırılması için Firma, belirlenen personellere gerekli eğitimi yeter düzeyde verecektir. Bu hususta, gerekli-yeterli donanım ve yazılım iş bu ihale konusu kapsamında temin ve teslim edilecektir. Bu hususun gerçekleşmesi için süre kısıtlaması yoktur. *After the training all personel should be qualified for his/her duties. This training level is the responsibility of the supplier. All traing elements should be hand over to Panagro. There should be no time limitation untile qualifications are achieved and agreed by both parties that shall also be documented.*

Eğitim süresi minimum iki çalışma haftası olup tedarikçi tarafından sertifikalandırılmalıdır. ***Training period should be a minumum of two weeks of working days.***

18. TERMİN PLANI ve CEZAİ ŞARTLAR / *TIME PLAN and PENALTIES*

18.2.1. Firmalar tekliflerinde termin süresi, iş bitirme, performans testleri ve devreye alma tarihlerini belirteceklerdir. Aksi durumda bu performans başarısızlığı olarak değerlendirilecektir. *The company should have sole responsibility for the identifiction of completion of work, time plan, start up dates in their proposal. Which should be achived. Otherwise this will be accepted performance failure.*

18.2.2. Devreye alma süresinde gecikme olduğu takdirde her bir gün için bedelin % 1 'i kadar YÜKLENİCİ firma İŞVEREN firmaya ödeme yapacaktır. *Any delay in start-up will be charged as penalty of 1 % contract values that shall be paid by the contractor to Panagro.* Bakınız/*See 6.6*

İş bitiminde makine ve ekipman özelliklerini belirten manueller ve kataloglar 2 nüsha halinde verilecektir. *All machine and equipment catalogue as well as manuals Two (2) hard copies shall be handed over just after the completion of work.*

19. DÖKÜMANTASYON / *DOCUMENTATION*

19.1. Tedarik / *Supply*

Bütün dökümanlar AutoCAD uyumlu CD-ROM (1) ve hard copy(2) olarak gönderilecektir. *All documentations AutoCAD adoptable shall be handed over in CD-ROM (one,1) and hard copies (two,2) format.*

Dökümantasyon şunları içermektedir, *Documentations should cover the followings;*

19.2. Parça listesi ve özellikleri, *Spare parts and their descriptions,*

Güvenlik talimatları, manueller(operators/maintenance) , elektrik çizimleri, enstrüman kitapçıkları, yerleşimler, P&ID çizimleri, uyumluluk deklerasyonu, AB v.s. – / *Security instructions,*

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manuals(operator/maintenance) electrical drawings, instruments handbooks, layouts, P&ID drawings, conformity decleration with EU etc.

- Operatör kullanım klavuzları / *Operator usaga manual in native language (i.e. Turkish)*
- Komponent kullanım klavuzları / *Component use guides*
- PLC hardware ve software */ PLC hardware and software*
- Elektrik projesi */ Electrical projects*

19.3. **Dökümantasyon kapsamı/** ***Scope of Documentation*** *Security instructions, operations and maintenance manuals inc. trouble shootings, electrical drawings, enstruments booklets, layouts, P&ID's, Declarations, i.e., declerations of conformity, E.U. e.t.c.*

20. MÜHENDİSLİK / *ENGINEERING*

İçerir / Included

Adoption of the actual situation under participation of the operator clarification of demands for complete discharge (goal definition) what will currently be cleaned and how „internal inspection" of the plant or of critical system part due to endoscopy and as far as necessary partly dismantle inspection of contamination, like deposits, crusts, dead zones with product residuals preparation of rehabilitation actions with estimated budget individual projection of a dry cleaning system with estimated budget

21. FİYATLANDIRMA ve ÖDEME KOŞULLARI / *PRICING AND PAYMENT CONDUTIONS*

Ticari sözleşmede belirtilmiştir. */ Described in commercial contract*

22. NAKLİYE / *TRANSPORT*

Fiyata dâhil edilmelidir. */ Should be included in the price.*

Bkz/*See: Annex_Orgalime S2000, Annex_INCOTERMS_2000*

23. GARANTİLER / *GUARANTIES*

2 yrs.

ÖNEMLİ NOT. / *IMPORTANT NOTICE*

İş bu Teknik Şartname ve ekleri ticari şartnamenin bir parçası olup taraflarca mütabık kalınıp imzalanmalıdır. *Bkz. Bölüm 6.*

Hereby technical specification and annextures are the part of commercial contract that should be aggreed and signed by both parties. See Chapter 6.

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24. EKLER / ANNEXTURES

24.1 Kabul ve değerlendirme evrakları –örnekleri

24.1.1. Zaman Planı		*EK A*
24.1.2. Montaj iş bitimi Sertifikası		*EK B*
24.1.3.	Operasyonel Kalifikasyon Sertifikası	*EK C*
24.1.4.	Proje Eksiklikleri Listesi	*EK D*
24.1.5.	Geçici Kabul Tutanağı	*EK E*
24.1.6.	Ticari Sözleşme / Commercial Contract	*EK F*
24.1.7.	EK1/ANNEX1 BUHAR KALİTESİ/*STEAM QUALITY*	*EK I*
24.1.8.	Makine Alım otomasyon Teknik Şartnamesi / *Technical Specification for Automation*	*EK II*
24.1.9.	Genel Elektrik Şartnamesi / *General Electric Technical Specifications*	*EK III*
24.1.10.	*Incoterm 2010*	*EK IV*
24.1.11.	*Orgalime S2000*	*EK V*

M. SAILI

İŞ PLANI

- Tedarikçi tarafından iş bu form formatı kullanılarak iş planı takip edilip proje süresince güncellenecek.

ÖRNEKTİR — Borulama | Kablolama | Kuru testler | Su testleri | Üretim — K: Kabuller

Takvim haftası		W29	W30	W31	W32	W33	W34	W35	W36	W37	W38	W39	W40	W41	W42	W43	W44	W45	W46	W47	W48
Saha malzeme teslimi TEORİK		123	123	123	123	1	1	1	1	1	1	1	1	1	3		3	3			
Saha malzeme teslimi GERÇEKLEŞEN		25	38	50	63	67	71	75	79	83	88	92	96	100	33		67	100			
Mekanik Montaj TEORİK		25	35	45	50	55	55														
Mekanik Montaj GERÇEKLEŞEN																					
Elektrik montajı ve panolar TEORİK		4	4	4	4	4	4	4	4	4	4	1	1	1			1		K		
Elektrik montajı ve panolar GERÇEKLEŞEN		18	27	36	45	55	64	73	82	91	100	33	67	100							
Kuru testler Teorik		10	35	55	75	80	80														
Kuru testler Gerçekleşen																					
Su testleri TEORİK		5	5	5	5	5	5	5	5	5	5	5	5	5	1		1	1	1		K
Su testleri GERÇEKLEŞEN		14	21	29	36	43	50	57	64	71	79	86	93	100	33		67	100	100		K
Ürün Denemeleri TEO		10	25	35	50	65	70														K
Ürün Denemeleri GERÇ.																					
Kabuller TEORİK		6	6	6	6	6	2	2	2											1	
Kabuller GERÇEKLEŞEN		33	50	67	83	100	33	67	100											50	

USARI

Tedarikçi malzemelerin tahmini teslim süreleri sözleşmenin maddelerini dikkate alarak iş bu sözleşmeyi imzalar. Makul gecikmeler için işi aksatmamak kaydı ile PANAGRO nun görüş ve onayını alarak hedefenen ve gerçekleşen tarihleri düzenler ve işin taahhüt edilen sürelerde bitirilmesinden mesuldür.

Kabul edilen tahminin veya siparişin ve sözleşmenin kabulü ile ilgili olarak ödeme tarihlerinde müşterinin gecikmesi, teslim tarihleri veya hizmetlerin gerçekleştiği tarihlerdeki eşdeğer ile bir yansımaya önödeme harici neden olamaz. Tedarikçi sözleşmeden doğan yükümlülüklerini yerine getirirken müşteriden kaynaklı herhangi bir gecikmeden ötürü özdeşleşme hakkına sahiptir.

EK / ANNEXTURE B

COMPLETION OF ASSEMBLY CERTIFICATE
MONTAJ İŞ BİTİMİ SERTİFİKASI

Tedarikçi tarafından teknik şartnamede belirtilen montaj ____ / ____ /_____ tarihinde tamamlanmış olup devreye alma ve kabuller tedarikçi tarafından gerçekleştirmesi devam edecektir.

PANAGRO

Kaşınhanı Yeni Mah., Sardunya Sok. No:1 Meram/Konya

TEDARİKÇİ

Adres.....

montaj

Kabul ilanı aşağıda beliritilen husus dikkate alınarak Kabul edilmiştir;

Kabul herhangi bir husus belirtilmeden gerçekleşmiştir.

REZERV EDİLEN HUSUSLAR:

Tedarikçi İmzası	**Panagro İmzası**
.....yetkili tarfından	**.....yetkili tarfından**

OPERATIONAL QUALIFICATION CERTIFICATE
OPERASYONAL KALİFİKASYON SERTİFİKASI

Teknik şartnamede belirtilen şartlara göre proses ve otomasyon için gerekli mekanik/elektrik/enstruman düzenlemeleri gerçekleşmiş ve şartlar _____ tarihinde sağlanmıştır..

TEDARİKÇİ

Adres.....

Montaj

1. Şartnamede belirtilen spesifikasyonlara göre montaj kabulü gerçekleşmiştir.

Evet / Hayır

Şartnamede belirtilen spesifikasyonlara göre montaj kabulü PROJE EKSİKLİK LİSTESİ dikkate alınarak gerçekleştirilecektir.

Evet / Hayır

25. Tedarikçi kontratın tüm aşamalarında sorumluluklarını yerine getirmekle yükümlü olup bu evrak işin tamamlandığı anlamına gelmez.

Tedarikçi İmzası	**Panagro İmzası**
.....yetkili tarfından	**.....yetkili tarfından**

EK ANNEXTURE D

PROJE EKSİKLİKLERİ LİSTESİ
PUNCH LIST ITEMS

KONU	DÜZELTİCİ FAALİYET	YAYIN ve TAMAMLAMA TARİHİ
SUBJECT	CORRECTION	RELEASED ON

PROVISIONAL ACCEPTANCE CERTIFICATE

GEÇİCİ KABUL TUTANAĞI

GEÇİCİ KABUL

İş, tedarikçi tarafından kontrat yükümlülüklerine göre ___/___/_____ tarihide yapılmış olup, belirtilen tarihten itibaren bir(1) yıl alınan hizmet/üründe takip yapılarak firmanın sonradan tespit edilen eksiklik ve kusurları talep edilebilecektir. Yıl dolması akabinde herhangi bir talep olmadığı taktirde GEÇİCİ KABUL kesin Kabul olarak geçerli sayılacaktır.

TEDARİKÇİ

Adres

Montaj

1. Alınan hizmet/ürün müşteri tarafından uygun görülmüş olup ticari üretimler yeni sistemle gerçekleştirilebilecektir.

2. Kontrat şartlarının sağlanmadığı durumlarda Panagro nun tüm hakları saklıdır..

Tedarikçi İmzası	**Panagro İmzası**
.....yetkili tarfından	**.....yetkili tarfından**

M. SARI

Ticari Sözleşme / Commercial Contract

Bkz. ABH tarafından hazırlananan Ticari Sözleşme /

See attached contract which is Prepared by ABH /

STEAM QUALITY

CULINARY STEAM:

- Steam produced from potable water according to FDA/3A practices.
- Water treated by filtration, ion exchange or similar.
- List of allowed additives is enclosed.
- Added quantities should be reduced to the minimum necessary/possible.

ALLOWED ADDITIVES

- Polyoxyethylene Glycol (P.O.G)
- Cobalt Sulphate (as catalysts)
- Lignosulphonic Acid
- Monobutyl ether of P.O.G
- Monobutyl ether of polyxypropylene Glycol
- Sodium Hydroxide
- Sodium Lignosulphonate
- Sodium Metasilicate
- Polyoxypropylene Glycol
- Potassium Carbonate
- Sodium Humate
- Sodium Acetate
- Sodium Aluminate
- Sodium alginate
- Sodium Carbonate
- Sodium Sulphate
- Sodium Tripolyphosphate
- Tannin
- Sodium Sulphite
- Sodium Silicate

N.B: The additives must not cause any odour/off-flavours.

3-A ACCEPTED PRACTICES FOR A METHOD OF PRODUCING STEAM OF CULINARY QUALITY

Number 609-00

Formulated by
International Association of milk, Food and Environmental Sanitarians
United States Public Health Service
The Dairy Industry Committee

It s the purpose of the IAMFES, USPHS and DIC in connection with the development of the 3-A Sanitary Standards program to allow and encourage full freedom for inventive genius or new developments. Methods of producing steam of culinary quality heretofore or hereafter developed which so differ in material, fabrication and installation or otherwise as not to conform with the following practices, but which, in the opinion of the operator, manufacturer or fabricator are equivalent or better, may be submitted for the joint consideration of IAMFES, USPHS, and DIC, at any time.

A. *SCOPE*

A.1 These 3-A Accepted Practices cover a method of producing steam of culinary quality. These practices are not intended for heating of rinse water or the sterilizing of equipment.

B. *DEFINITIONS*

B.1 *Culinary Steam*: Shall mean steam that will be used with product.

B.2 *Product*: Shall mean milk, milk products, cheese, ice cream, ices and formulated dairy products.

B.3 *Safe water*: Shall mean water form a supply properly located, protected and operated and shall be of a safe sanitary quality. The water shall meet the standards prescribed in the Public Health Service Drinking Water Standards which are found in the Code of Federal Regulations, Title 42, Chapter 1, Part 72, Subpart J. [1]

B.4 *Product Contact Surfaces*: Shall mean surfaces in contact with culinary steam.

C. *MATERIALS*

C.1 Product contact surfaces shall be of stainless steel of the AISI 300 series[2] or corresponding ACI[3] types (See Appendix, Section G), or equally corresion-resistant metal that is non-toxic and non-absorbent, except that:

C.1.1 Rubber and rubber-like materials may be used for multi-use gaskets.

C.1.2 Rubber and rubber-like materials when used for the above specified applications shall comply with the applicable provisions of the 3-S standard for rubber and rubber-like materials, Number 18-00.

C.1.3 Plastic materials may be used for multi-use gaskets.

C.1.4 Plastic materials when used for the above specified applications shall comply with the applicable provisions of the 3-A standard for plastic materials, Number 20-11.

C.1.5 Single-service sanitary-type gaskets may be used in connections which must be disassembled for cleaning.

D *FABRICATION*

D.1 Product contact surfaces not designed to be mechanically cleaned shall be readily accessible for cleaning and inspection either when in an assembled position or when removed. Removable parts shall be readily demountable.

D.2 The piping assembly for direct steam injection. The piping assembly for direct steam injection shall include a filtering device capable of removing particles 5 microns in size

E. *BOILER FEED WATER*

E.1 *Source:* Safe water or water supplies acceptable to the regulatory agency having jurisdiction shall be used.

E.2 *Treatment*: Most boiler feed waters must be treated to prevent corrosion and scale in boilers and/or to facilitate sludge removal for proper boiler care and operation. Boiler feed water treatment and control shall be under the supervision of trained personnel or a firm specializing in industrial water conditioning. Such personnel shall be informed that the steam is to be used for culinary purposes.

Pre-treatment of feed waters for boilers or steam generating systems to reduce water hardness before entering the boiler or steam generator by ion exchange or other acceptable procedures is preferable to addition of conditioning compounds to boiler waters.

The list of boiler water additives that may be safely used in the preparation of steam that will be in contact with product will be found in the Code of Federal Regulations, Title 21, Chapter 1, Part 173, Subpart D, Section 173.310[1]. Boiler compounds containing cyclohexylamine, diethylaminoethanol, hydrazine, morpholine, octadecylamine and trisodium nitrilotriactetate shall not be permitted for use in steam in contact with milk and milk products.

Greater amounts of boiler water treatment compounds shall not be used than the minimum necessary for controlling boiler scale or other boiler water treatment purposes and no greater amount of steam shall be used than necessary. Tannin is also frequently added to boiler water to facilitate sludge removal during boiler blow-down. This product, although included in the list of approved boiler additives, has been reported to give rise to odor problems, and for this reason should be used with caution.

E.3 Containers of boiler water additives for use in the processing plant must be clearly labeled as to the identity of the material that is added to boiler feed water.

F. *BOILER OPERATION*

A supply of clean, dry and saturated steam is necessary for proper equipment operation; therefore, boilers and steam generation equipment shall be operated in such a manner as to prevent foaming, priming, carry-over and excessive entrainment of boiler water into the steam. Carry-over of boiler water additives can result in the production of product off-flavours.

Manufacturers' instructions regarding recommended water level and blow-down should be consulted and rigorously followed. The blow-down of the boiler should be carefully watched, so that over-concentration of the boiler water solids and foaming are avoided.

It is recommended that periodic analyses be made of condensate samples. Such samples shall be taken from the condensate outlet of the final steam separating equipment or the line between the final steam separating equipment or the line between the final steam separating equipment and the point of the introduction into the processing equipment.

APPENDIX

G. *STAINLESS STEEL MATERIALS*

Stainless steel conforming to the applicable composition ranges established by AISI[2] for wrought products, or by ACI[3] for cast products, should be considered in compliance with the requirements of Section C.1 herein. Where welding is involved the carbon content of the stainless steel should not exceed 0.08%.

The first reference cited in C.1 sets forth the chemical ranges and limits of acceptable stainless steels of the 300 series. Cast grades of stainless steel corresponding to types 302, 303, 304, and 306 are designated CF-20, CF-16F, CF-8, and CF-8M, respectively. These cast grades are covered by ASTM[4] specifications A296-68 and A351-70.

Substances	Limitations
Sodium carboxy-methylcellulose.....	Contains not less than 95 percent sodium carboxy-methylcellulose on a dry-weight basis, with maximum substitution of 0.9 carboxy-methylcellulose groups per anhydroglucose unit, and wit a minimum viscosity of 15 centiporses for 2 percent by weight aqueous solution at 25° C; by method prescribed in the "Food Chemicals Codex". 3d Ed, (1981), pp. 280-282, which is incorporated by reference. Copies may be obtained from the National Academy Press, 2101 Constitution Ave. NW, Washington DC 20418, or may be examined at the office of the Federal Register, 1100 L St. NW, Washington DC 20408.
Sodium glucoheptonate.....	Less than 1 part per million cyanide in the sodium glucoheptonate.
Sodium hexametaphosphate.....	
Sodium humate.....	
Sodium hydroxide.....	
Sodium lignosultonate.....	
Sodium metabisulfite.....	
Sodium metasilicate.....	
Sodium nitrate.....	
Sodium phosphate (mono-, di-, tri-)	
Sodium polyacrylate.....	
Sodium polymethacrylate.....	
Sodium silicate.....	
Sodium sulfate.....	
Sodium sulfite (neutral or alkaline)...	
Sodium tripolyphosphate.....	
Tannin (including quebracho extract)	
Tetrasodium EDTA.....	
Tetrasodium pyrophosphate.....	

(d) Substances used alone or in combination with substances in paragraph (c) of this section:

Substances	Limitations
Cyclohexylamine.....	Not to exceed 10 parts per million in steam, and excluding use of such steam in contact with milk and milk products.
Diethylaminoethanol.....	Not to exceed 15 parts per million in steam, and excluding use of such steam in contact with milk and milk products.
Hydrazine.....	Zero in steam.
Morpholine.....	Not to exceed 10 parts per million in steam, and excluding use of such steam in contact with milk and milk products.
Octadecylamine.....	Not to exceed 3 parts per million in steam, and excluding use of such steam in contact with milk and milk products.
Trisodium nitrilotriacetate.....	Not to exceed 5 parts per million in boiler feedwater, not to be used where steam will be in contact with milk and milk products.

(e) To assure safe use of the additive, in addition to the other information required by the Act, the label or labeling shall bear:
(1) The common or chemical name or names of the additive or additives.
(2) Adequate directions for use to assure compliance with all the provisions of this section.

(Secs. 201(s), 409, 72 Stat, 1784-1788 as amended (21 U.S.C 321(s), 348); secs. 409, 701(e), 706, 70 Stat, 919 as amended, 72 Stat, 1784-1788 as amended, 74 Stat, 399-407 as amended (21 U.S.C 348, 371(e), 376))

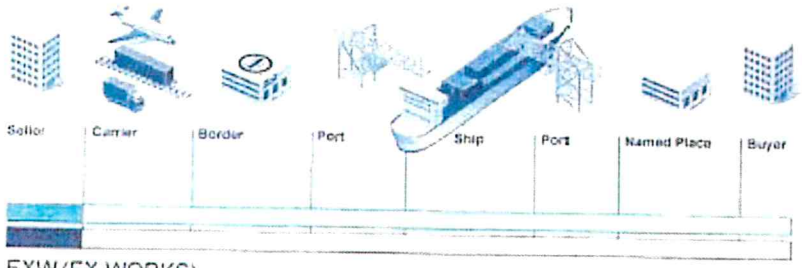
[42 FR 14526, Mar. 15, 1977, as amended at 45 FR 73922, Nov. 7,1980; 45 FR 85726, Dec. 30, 1980; 48 FR 7439, Feb. 22, 1983; 49 FR 5748, Feb. 15, 1984; 49 FR 10106, Mar. 19, 1984; 50 FR 49536, Dec. 3, 1985]

§ 173.315 Chemicals used in washing or to assist in the lye peeling of fruits and vegetables.

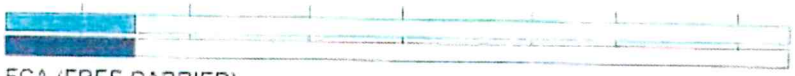
Chemicals may be safely used to wash or to assist in the lye peeling of fruits and vegetables in accordance with the following conditions:
(a) The chemicals consist of one or more of the following:
(1) Substances generally recognized as safe in food or covered by prior

EK4

INSURANCE LIABILITY and COST PURSUANT TO INCOTERMS 2010 / SIGORTA YÜKÜMLÜLÜĞÜ ve INCOTERMS 2010 a göre MALİYET



EXW (EX WORKS)



FCA (FREE CARRIER)

CPT (CARRIAGE PAID TO)

CIP (CARRIAGE AND INSURANCE PAID TO)

DAT (DELIVERED AT TERMINAL)

Seller delivers when the goods, once unloaded from the arriving means of transport, are placed at the disposal of the buyer at a named terminal at the named port or place of destination.

DAP (DELIVERED AT PLACE)

Seller delivers when the goods are placed at the disposal of the buyer on the arriving means of transport ready for unloading at the named place of destination.

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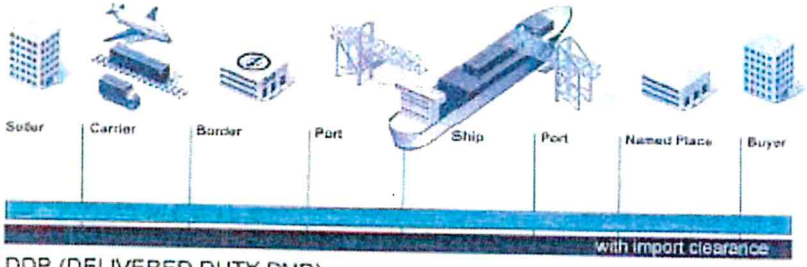

DDP (DELIVERED DUTY PAID)

FAS (FREE ALONGSIDE SHIP)

FOB (FREE ON BOARD)

CFR (COST AND FREIGHT)

CIF (COST, INSURANCE AND FREIGHT)

The risk is borne by the seller
The costs are borne by the seller
Transport insurance is the responsibility of the seller
The risk is borne by the buyer
The costs are borne by the buyer
Clauses for sea and inland water transport

Source: Incoterms® 2010 by International Chamber of Commerce

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GENERAL CONDITIONS
for the
SUPPLY OF MECHANICAL, ELECTRICAL AND ELECTRONIC PRODUCTS

Brussels, August 2000

PREAMBLE

1. These General Conditions shall apply when the parties agree in writing or otherwise thereto. When the General Conditions apply to a specific contract, modifications of or deviations from them must be agreed in writing.
The object(s) to be supplied under these General Conditions is (are) hereinafter referred to as the Product.

Wherever these General Conditions use the term in writing, this shall mean by document signed by the parties, or by letter, fax, electronic mail and by such other means as are agreed by the parties.

PRODUCT INFORMATION

2. All information and data contained in general product documentation and price lists, whether in electronic or any other form, are binding only to the extent that they are by reference expressly included in the contract.

DRAWINGS AND DESCRIPTIONS

3. All drawings and technical documents relating to the Product or its manufacture submitted by one party to the other, prior or subsequent to the formation of the contract, shall remain the property of the submitting party.

Drawings, technical documents or other technical information received by one party shall not, without the consent of the other party, be used for any other purpose than that for which they were provided. They may not, without the consent of the submitting party, otherwise be used or copied, reproduced, transmitted or communicated to a third party.

4. The Supplier shall, not later than at the date of delivery, provide free of charge information and drawings which are necessary to permit the Purchaser to erect, commission, operate and maintain the Product. Such information and drawings shall be supplied in the number of copies agreed upon or at least one copy of each. The Supplier shall not be obliged to provide manufacturing drawings for the Product or for spare parts.

ACCEPTANCE TESTS

5. Acceptance tests provided for in the contract shall, unless otherwise agreed, be carried out at the place of manufacture during normal working hours.

If the contract does not specify the technical requirements, the tests shall be carried out in accordance with general practice in the appropriate branch of industry concerned in the country of manufacture.

6. The Supplier shall notify the Purchaser in writing of the acceptance tests in sufficient time to permit the Purchaser to be represented at the tests. If the Purchaser is not represented, the test report shall be sent to the Purchaser and shall be accepted as accurate.

7. If the acceptance tests show the Product not to be in accordance with the contract, the Supplier shall without delay remedy any deficiencies in order to ensure that the Product complies with the contract. New tests shall then be carried out at the Purchaser's request, unless the deficiency was insignificant.

8. The Supplier shall bear all costs for acceptance tests carried out at the place of manufacture. The Purchaser shall however bear all travelling and living expenses for his representatives in connection with such tests.

DELIVERY. PASSING OF RISK

9. Any agreed trade term shall be construed in accordance with the INCOTERMS in force at the formation of the contract.

If no trade term is specifically agreed, the delivery shall be Ex works (EXW).

If, in the case of delivery Ex works, the Supplier, at the request of the Purchaser, undertakes to send the Product to its destination, the risk will pass not later than when the Product is handed over to the first carrier.

Partial shipments shall be permitted unless otherwise agreed.

TIME FOR DELIVERY. DELAY

10. If the parties, instead of specifying the date for delivery, have specified a period of time on the expiry of which delivery shall take place, such period shall start to run as soon as the contract is entered into, all official formalities have been completed, payments due at the formation of the contract have been made, any agreed securities have been given and any other preconditions have been fulfilled.

11. If the Supplier anticipates that he will not be able to deliver the Product at the time for delivery, he shall forthwith notify the Purchaser thereof in writing, stating the reason, and, if possible, the time when delivery can be expected.

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If the Supplier fails to give such notice, the Purchaser shall be entitled to compensation for any additional costs which he incurs and which he could have avoided had he received such notice.

12. If delay in delivery is caused by any of the circumstances mentioned in Clause 39 or by an act or omission on the part of the Purchaser, including suspension under Clauses 20 or 42, the time for delivery shall be extended by a period which is reasonable having regard to all the circumstances in the case. This provision applies regardless of whether the reason for the delay occurs before or after the agreed time for delivery.

13. If the Product is not delivered at the time for delivery (as defined in Clauses 10 and 12), the Purchaser is entitled to liquidated damages from the date on which delivery should have taken place.

The liquidated damages shall be payable at a rate of 0.5 per cent of the purchase price for each completed week of delay. The liquidated damages shall not exceed 7.5 per cent of the purchase price.

If only part of the Product is delayed, the liquidated damages shall be calculated on that part of the purchase price which is attributable to such part of the Product as cannot in consequence of the delay be used as intended by the parties.

The liquidated damages become due at the Purchaser's demand in writing but not before delivery has been completed or the contract is terminated under Clause 14.

The Purchaser shall forfeit his right to liquidated damages if he has not lodged a claim in writing for such damages within six months after the time when delivery should have taken place.

14. If the delay in delivery is such that the Purchaser is entitled to maximum liquidated damages under Clause 13 and if the Product is still not delivered, the Purchaser may in writing demand delivery within a final reasonable period which shall not be less than one week.

If the Supplier does not deliver within such final period and this is not due to any circumstance for which the Purchaser is responsible, then the Purchaser may by notice in writing to the Supplier terminate the contract in respect of such part of the Product as cannot in consequence of the Supplier's failure to deliver be used as intended by the parties.

If the Purchaser terminates the contract he shall be entitled to compensation for the loss he has suffered as a result of the Supplier's delay. The total compensation, including the liquidated damages which are payable under Clause 13, shall not exceed 15 per cent of that part of the purchase price which is attributable to the part of the Product in respect of which the contract is terminated.

The Purchaser shall also have the right to terminate the contract by notice in writing to the Supplier, if it is clear from the circumstances that there will occur a delay in delivery which, under Clause 13 would entitle the Purchaser to maximum liquidated damages.

In case of termination on this ground, the Purchaser shall be entitled to maximum liquidated damages and compensation under the third paragraph of this Clause 14.

15. Liquidated damages under Clause 13 and termination of the contract with limited compensation under Clause 14 are the only remedies available to the Purchaser in case of delay on the part of the Supplier. All other claims against the Supplier based on such delay shall be excluded, except where the Supplier has been guilty of gross negligence.

In these General Conditions gross negligence shall mean an act or omission implying either a failure to pay due regard to serious consequences, which a conscientious supplier would normally foresee as likely to ensue, or a deliberate disregard of the consequences of such act or omission.

16. If the Purchaser anticipates that he will be unable to accept delivery of the Product at the delivery time, he shall forthwith notify the Supplier in writing thereof, stating the reason and, if possible, the time when he will be able to accept delivery.

If the Purchaser fails to accept delivery at the delivery time, he shall nevertheless pay any part of the purchase price which becomes due on delivery, as if delivery had taken place. The Supplier shall arrange for storage of the Product at the risk and expense of the Purchaser. The Supplier shall also, if the Purchaser so requires, insure the Product at the Purchaser's expense.

17. Unless the Purchaser's failure to accept delivery is due to any such circumstance as mentioned in Clause 39, the Supplier may by notice in writing require the Purchaser to accept delivery within a final reasonable period.

If, for any reason for which the Supplier is not responsible, the Purchaser fails to accept delivery within such period, the Supplier may by notice in writing terminate the contract in whole or in part. The Supplier shall then be entitled to compensation for the loss he has suffered by reason of the Purchaser's default. The compensation shall not exceed that part of the purchase price which is attributable to that part of the Product in respect of which the contract is terminated.

PAYMENT

18. Unless otherwise agreed, the purchase price shall be paid with one third at the formation of the contract and one third when the Supplier notifies the Purchaser that the Product, or the essential part of it, is ready for delivery. Final payment shall be made when the Product is delivered.

Payments shall be made within 30 days of the date of the invoice.

19. Whatever the means of payment used, payment shall not be deemed to have been effected before the Supplier's account has been fully and irrevocably credited.

20. If the Purchaser fails to pay by the stipulated date, the Supplier shall be entitled to interest from the day on which payment was due. The rate of interest shall be as agreed between the parties. If the parties fail to agree on the rate of interest, it shall be 8 percentage points above the rate of the main refinancing facility of the European Central Bank in force on the due date of payment.

In case of late payment the Supplier may, after having notified the Purchaser in writing, suspend his performance of the contract until he receives payment.

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If the Purchaser has not paid the amount due within three months the Supplier shall be entitled to terminate the contract by notice in writing to the Purchaser and to claim compensation for the loss he has incurred. The compensation shall not exceed the agreed purchase price.

RETENTION OF TITLE

21. The Product shall remain the property of the Supplier until paid for in full to the extent that such retention of title is valid under the applicable law.

The Purchaser shall at the request of the Supplier assist him in taking any measures necessary to protect the Supplier's title to the Product in the country concerned.

The retention of title shall not affect the passing of risk under Clause 9.

LIABILITY FOR DEFECTS

22. Pursuant to the provisions of Clauses 23-37 inclusive, the Supplier shall remedy any defect or nonconformity (hereinafter termed defect(s)) resulting from faulty design, materials or workmanship.

23. The Supplier's liability is limited to defects which appear within a period of one year from delivery. If the daily use of the Product exceeds that which is agreed, this period shall be reduced proportionately.

24. When a defect in a part of the Product has been remedied, the Supplier shall be liable for defects in the repaired or replaced part under the same terms and conditions as those applicable to the original Product for a period of one year. For the remaining parts of the Product the period mentioned in Clause 23 shall be extended only by a period equal to the period during which the Product has been out of operation as a result of the defect.

25. The Purchaser shall without undue delay notify the Supplier in writing of any defect which appears. Such notice shall under no circumstance be given later than two weeks after the expiry of the period given in Clause 23.

The notice shall contain a description of the defect.

If the Purchaser fails to notify the Supplier in writing of a defect within the time limits set forth in the first paragraph of this Clause, he loses his right to have the defect remedied.

Where the defect is such that it may cause damage, the Purchaser shall immediately inform the Supplier in writing. The Purchaser shall bear the risk of damage resulting from his failure so to notify.

26. On receipt of the notice under Clause 25 the Supplier shall remedy the defect without undue delay and at his own cost as stipulated in Clauses 22-37 inclusive.

Repair shall be carried out at the place where the Product is located unless the Supplier deems it appropriate that the defective part or the Product is returned to him for repair or replacement.

The Supplier is obliged to carry out dismantling and re-installation of the part if this requires special knowledge. If such special knowledge is not required, the Supplier has fulfilled his obligations in respect of the defect when he delivers to the Purchaser a duly repaired or replaced part.

27. If the Purchaser has given such notice as mentioned in Clause 25 and no defect is found for which the Supplier is liable, the Supplier shall be entitled to compensation for the costs he has incurred as a result of the notice.

28. The Purchaser shall at his own expense arrange for any dismantling and reassembly of equipment other than the Product, to the extent that this is necessary to remedy the defect.

29. Unless otherwise agreed, necessary transport of the Product and/or parts thereof to and from the Supplier in connection with the remedying of defects for which the Supplier is liable shall be at the risk and expense of the Supplier. The Purchaser shall follow the Supplier's instructions regarding such transport.

30. Unless otherwise agreed, the Purchaser shall bear any additional costs which the Supplier incurs for repair, dismantling, installation and transport as a result of the Product being located in a place other than the destination stated in the contract or - if no destination is stated - the place of delivery.

31. Defective parts which have been replaced shall be made available to the Supplier and shall be his property.

32. If, within a reasonable time, the Supplier does not fulfil his obligations under Clause 26, the Purchaser may by notice in writing fix a final time for completion of the Supplier's obligations.

If the Supplier fails to fulfil his obligations within such final time, the Purchaser may himself undertake or employ a third party to undertake necessary remedial works at the risk and expense of the Supplier.

Where successful remedial works have been undertaken by the Purchaser or a third party, reimbursement by the Supplier of reasonable costs incurred by the Purchaser shall be in full settlement of the Supplier's liabilities for the said defect.

33. Where the defect has not been successfully remedied, as stipulated under Clause 32,

a) the Purchaser is entitled to a reduction of the purchase price in proportion to the reduced value of the Product, provided that under no circumstance shall such reduction exceed 15 per cent of the purchase price, or

b) where the defect is so substantial as to significantly deprive the Purchaser of the benefit of the contract, the Purchaser may terminate the contract by notice in writing to the Supplier. The Purchaser is then entitled to compensation for the loss he has suffered up to a maximum of 15 per cent of the purchase price.

34. The Supplier is not liable for defects arising out of materials provided, or a design stipulated or specified by the Purchaser.

35. The Supplier is liable only for defects which appear under the conditions of operation provided for in the contract and under proper use of the Product.

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The Supplier's liability does not cover defects which are caused by faulty maintenance, incorrect erection or faulty repair by the Purchaser, or by alterations carried out without the Supplier's consent in writing.

Finally the Supplier's liability does not cover normal wear and tear or deterioration.

36. Notwithstanding the provisions of Clauses 22-35 the Supplier shall not be liable for defects in any part of the Product for more than two years from the beginning of the period given in Clause 23.

37. Save as stipulated in Clauses 22-36, the Supplier shall not be liable for defects. This applies to any loss the defect may cause including loss of production, loss of profit and other indirect loss. This limitation of the Supplier's liability shall not apply if he has been guilty of gross negligence as defined in Clause 15.

ALLOCATION OF LIABILITY FOR DAMAGE CAUSED BY THE PRODUCT

38. The Supplier shall not be liable for any damage to property caused by the Product after it has been delivered and whilst it is in the possession of the Purchaser. Nor shall the Supplier be liable for any damage to products manufactured by the Purchaser, or to products of which the Purchaser's products form a part.

If the Supplier incurs liability towards any third party for such damage to property as described in the preceding paragraph, the Purchaser shall indemnify, defend and hold the Supplier harmless.

If a claim for damage as described in this Clause is lodged by a third party against one of the parties, the latter party shall forthwith inform the other party thereof in writing.

The Supplier and the Purchaser shall be mutually obliged to let themselves be summoned to the court or arbitral tribunal examining claims for damages lodged against one of them on the basis of damage allegedly caused by the Product.

The limitation of the Supplier's liability in the first paragraph of this Clause shall not apply where the Supplier has been guilty of gross negligence as defined in Clause 15.

FORCE MAJEURE

39. Either party shall be entitled to suspend performance of his obligations under the contract to the extent that such performance is impeded or made unreasonably onerous by any of the following circumstances: industrial disputes and any other circumstance beyond the control of the parties such as fire, war, extensive military mobilization, insurrection, requisition, seizure, embargo, restrictions in the use of power and defects or delays in deliveries by sub-contractors caused by any such circumstance referred to in this Clause.

A circumstance referred to in this Clause whether occurring prior to or after the formation of the contract shall give a right to suspension only if its effect on the performance of the contract could not be foreseen at the time of the formation of the contract.

40. The party claiming to be affected by Force Majeure shall notify the other party in writing without delay on the intervention and on the cessation of such circumstance.

If Force Majeure prevents the Purchaser from fulfilling his obligations, he shall compensate the Supplier for expenses incurred in securing and protecting the Product.

41. Regardless of what might otherwise follow from these General Conditions, either party shall be entitled to terminate the contract by notice in writing to the other party if performance of the contract is suspended under Clause 39 for more than six months.

ANTICIPATED NON-PERFORMANCE

42. Notwithstanding other provisions in these General Conditions regarding suspension, each party shall be entitled to suspend the performance of his obligations under the contract, where it is clear from the circumstances that the other party will not be able to perform his obligations. A party suspending his performance of the contract shall forthwith notify the other party thereof in writing.

CONSEQUENTIAL LOSSES

43. Save as otherwise stated in these General Conditions there shall be no liability for either party towards the other party for loss of production, loss of profit, loss of use, loss of contracts or for any other consequential or indirect loss whatsoever.

DISPUTES AND APPLICABLE LAW

44. All disputes arising out of or in connection with the contract shall be finally settled under the Rules of Arbitration of the International Chamber of Commerce by one or more arbitrators appointed in accordance with the said rules.

45. The contract shall be governed by the substantive law of the Supplier's country.

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