CONSORTIUM KZU HOLDING GROUP



YOUR RELIABLE PARTNER IN

CONSULTING & ENGINEERING & MANUFACTURE AND ERECTION OF STEEL STRUCTURES & SUPERVISION & TRADING



KZU HOLDING GROUP



Company History

The company was established in 1992 in Prague, Czech Republic, as a holding structure where major owner is Dr. Eng. Marin Beloev.



KZU HOLDING GROUP



company profile

The activity of our company is in the following main fields:

- Large scale cylindrical storage tanks for all types of services;
- Industrial pipelines and facilities for chemical and metallurgical plants;
- Tank farms for storage;
- Pipeline compressor stations, Pressure vessels, Heavy steel structures, Ducts and facilities for power stations, nuclear power stations;
- Boilers and heat exchangers, Facilities for production and handling of cement and lime;
- Civil and industrial construction activities with steel structures,
- Project management as well as quality control of erection and welding activities
- NDT and evaluation of the status of welded structures, vessels, pipelines with the Acoustic Emission Method (AE)



KZU HOLDING GROUP



GEOGRAPHY OF OUR BUSINESS:The Consortium have completed projects in:

Germany Czech

Czech Republic

Greece

Syria

Lebanon

Sudan

Bulgaria

France

Belgium

Qatar

Jordan

Algeria

Iraq



TÜVRheinland TÜV Rheinland Bügarfa BÖS EN ISO 9001 2508 Cert. No.TRBA 100 0034

KZU HOLDING GROUP

company profile

Leading Members of the Consortium have the following activities:

- KZU GROUP ENGINEERING LTD. Consulting, design, welding engineering, NDE.
- SILOTEH BUL LTD. construction and equipment of projects for processing of agriculture products, grain silos and live stock.
- TERA BM LTD civil building of apartment and office houses, installation works in industrial projects.
- TANK OIL LTD. Equipment of petrol and gas terminal.
- KZU GROUP PROJECT LTD. Design of storage tanks and steel structures.





No	Description of the Project	Investor / Client	Year of completion
1	Three underground storage tanks 6500 m3 each for gasoline.	Ceska Rafinerska Litvinov, Czech Republic.	1992
2	Tank farm, consisting of 3 storage tanks 40 000 m³ each and 1 tank 80 000 m³ with double bottom and cup all with floating roofs with pump station. MERO IKL, Vohburg, Germany1995	MERO IKL/NOELL Hamburg, Germany	1995
3	One tank of 40 000 m3 with double bottom.	SUGAR RAFINERY PFEIFER & LANGEN, Appeldorn, Germany/NOELL Hamburg	1995
4	Two tanks for molasses of 35 000 m3 each and two tanks of 3 000 m3 each.	SUGAR RAFINERY JULICH, Germany	1996
5	Two tanks with double bottom of 25 000 m3 each.	OILTANKING/NOELL in Gera, Germany.	1996





No	Description of the Project	Investor / Client	Year of completion
6	Storage tanks with fixed roof, cup and double bottom for: - 3 pcs. volume 5 000 m3 - for fuel oil - 3 pcs. volume 2 000 m3 - for fuel oil - 2 pcs. volume 1 000 m3 - for fuel oil - 1 pcs. volume 1 600 m3 - for fuel oil - 1 pcs. volume 500 m3 - for fuel oil - 8 pcs. volume 360 m3 - for petrol	ČESKA RAFINERSKA AS Czech Republic	1995-1999
7	Storage tank of volume 3 000 m3 with fixed roof, cup and double bottom for waste waters.	CHEMOPETROL AS - Litvinov, Czech Republic	1996
8	Storage tanks with fixed roof, cup and double bottom: with pipelines and pump stations; 4 Pcs. x 10 000 m3 for petrol products.	CEPRO AS- Tremoshna near Pilsen, Czech Republic	1997
9	Storage tanks with volume 10 000 m3, with fixed roof, cup and double bottom - 11 pcs. for - for petrol products with pipelines and pump stations	CEPRO AS - Cerekvice nad Bystrici, Czech Republic	1999-2000



Refinery Company

References



2003-2004

No	Description of the Project	Investor / Client	Year of completion
10	Warehouse for BMW Wackersdorf, Germany	Stahlbau Wolf Rosenhaim, Germany	1997
11	Cement silos in 4x500 t. capacity Bosnia and Herzegovina	Plena, Bulgaria	1998
12	Forum roof of the Munich airport center West. Pipe trusses 25 m. long. See picture enclosed	Forum roof of the Munich airport center West	1998
13	1 x 5000 m3 for BTX fraction in Litvinov, Czech Republic -	Chemopetrol SA Litvinov	2001
14	Kerosene storage tank 12000 m3, at Munich airport	JPM Ingenieurtechik, Germany	2001
15	Filling station	Chemopetrol SA Litvinov	2002
16	Storage tank farm 10x33 000 m3 for Banias	BUTEC SAL,	2003-2004

Lebanon





No	Description of the Project	Investor / Client	Year of completion
17	Pumping stations for transitions pipelines	Ukraine	1997-2002
18.	MELUT BASIN OIL DEVELOPMENT PROJEC design, fabrication of 7 x 52166 m3. Design of storage tanks for Field Production Facility & Central Processing Facility.	PETRODAR/RPJV	2004-2005
19.	Prefabrication of steel structures for 2 storage tanks for crude oil with single capacity of 50000 m3	LUKOIL BULGARIA	2005
20.	Design fabrication and erection of steel roof structure for warehouse	Intercom Group	2005-2006
21.	Production of boiler	Promishlena Energetika AD	2005
22.	Production of absorber D=1850 mm H=10000 mm and ammonia tank	Agropolychim	2006
23.	Production of steel masts for Motor Vessel	Bulyard	2006





No	Description of the Project	Investor / Client	Year of completion
24	QATAR GAS ONSHORE PROJECT 3&4 – PROCUREMENT OF MATERIALS AND FABRICATION OF 25 STORAGE TANKS	BUTEC/QATAR LIQUIFIED GAS COMPANY	2007
25	DEVEN Jsco CFB Boiler Plant – Procurement of materials and fabrication of silos	Foster Wheeler	2007
26	DEVEN Jsco CFB Boiler Plant – Procurement of materials and fabrication of boiler supporting structure	Foster Wheeler	2007
28	DEVEN Jsco CFB Boiler Plant – Procurement of materials and fabrication of ducts	Foster Wheeler	2007
29	Site Erection of 6 storage tanks	Nord Ester France	2007
30	Site erection of 13 storage tanks	Lesieur, France	2007
31	Site pre-assembly of 7 steel silos	Alpro	2007





No	Description of the Project	Investor / Client	Year of completion
32	Design, fabrication and erection of 8x2000 m3 + 8x1000 m3 storage tanks for lubricants	Prista Oil	2007-2008
33	Design, fabrication and erection of 2x20000 m3 for crude oil with floating roofs, 2x8500 m3 for JET A1 with fixed roof, 1x1200 m3 for water and 1x50 m3	Jordan Petroleum Refinery Company	2008
34	Design and fabrication of 6x58 000 m3 single deck floating roof tanks and 2x66 000 m3 Double deck floating roof tanks	SCOP, Iraq	2008-2009
35	Design, procurement of materials and fabrication of 1x35 000 m3 double deck floating roof tank	BUTEC- SONATRACH	2008-2009
36	Design of 8x58 000 m3 single deck floating roof tanks	SCOP, Iraq	2009
37	Design of 3x10000 m3 with dome roof and 3x14000 m3 with cone roof	NOC/SCOP, Iraq	2009
38.	Design of 19 storage tanks with capacity from 500 m3 to 10 000 m3 for Samawa oil facility.	SCOP, Iraq	2009-2010





No	Description of the Project	Investor / Client	Year of completion
39	Site erection of 6x58000 m3 storage tanks fro Crude oil at Zubair 2, Iraq	SCOP	2012
40	Fabrication of 4x5000 m3 and 1x1000 m3 storage tanks for KAFZA free zone oil terminal, Iraq	SKA/DIG	2012
41	Site erection and testing of 4x5000 m3 and 1x1000 m3 storage tanks for KAFZA free zone oil terminal, Iraq	SKA/DIG	2012
42	Design, procurement of materials, fabrication and testing of Steam Knock Out Drum.	Neochim PLC, Bulgaria	2012
43	Fabrication of storage tank 6000 m3 for sulphuric acid.	Agropolychim/ Micromet, Bulgaria	2012
44	Shot blasting and coating with primer of 25000 m2 steel structures for Varna airport	ZKM Varna	2012
45	Process vessels for water treatment plant in South Iraq	Mena Group	2012





			Cart No.FRBA 10700347
No	Description of the Project	Investor / Client	Year of completion
46	Engineering, procurement, construction of 3 storage tanks 41 m. diameter self supporting umbrella roof	ExxonMobil Iraq/FLUOR/DIG	In progress
47	Shop fabrication of roof structures for 21 storage tanks for Zubair Oil Field Development Project	SPG Steiner GmbH	2013
48	Shop fabrication of roof compression rings and clean out doors for 21 storage tanks for Zubair Oil Field Development Project	SPG Steiner GmbH	2013



Clients Gratitude







To Whom It May Concern

Subject: BANIAS RAFINERY COMPANY PROJECT

For Supply, Construction, Commissioning and Start-up of 10 Petroleum Storage Steel tanks with capacity 33000 m3 each (8 tanks with floating mof and 2 with fixed roof)

This is to confirm that KZU HOLDING Ltd.-Branch Sofia , 12 "Hristo Vakarchski" street, 1700 Sofia-Bulgaria as our Subcontractor for the Basic Design, Shop Drawings and Manufacturing of Steef plates and structures of 10 Storage Steel Tarikx, has executed his works related to the above indicated Project.

During the implementation of Project we have had the opportunity to view and to assess the performance and capability of KZU HOLDING staffs and manufacturing facilities and are in position to state the following:

- KZU design engineers, according to the Client technical specification, standards and the requirements of BUTEC project control engineers, have performed basic design and shop drawings ahead of time schedule.
- Tanks details and structures have been manufactured in KZU factory with accordance to the approved drawings and under control effected by KZU, BUTEC and CLIENT Engineers. The manufacturing and package of Tanks detail and structures have been done without any mintakes, which could confuse the erection works at site.
- KZU and BUTEC Project Management have worked in close relation and cooperation in order to respect the delivery schedule and good performance of the crection of Tanks according to the contract obligations between BUTEC and the Client.

In conclusion we would like to confirm also, that KZU Holding Ltd. are a credible partner, who respect strictly the Contract agreements.

Nizar Younes Chairman of the Board Our Ref: C2099A/REC/C0/KZU/9003/885-04 Sub-Caveract No : C2099A/9003/04

12th August 2006

TO WHOM IT MAY CONCERN

Deer Sir, PROJECT

MILLUT BASEN OF DEVELOPMENT PROJECT (UPSTREAM)

ENGINEERING, PROCUREMENT, CONSTRUCTION AND COMMISSIONING (EPCC) FOR AL-JABALAYN CENTRAL PROCESSING FACILITIES, PALOGUE FIELD PRODUCTION FACILITIES.

HAMP LIFTHONERS

OPERATIONS BASE CAMPS AND PRODUCED WATER PIPELINE

OWNER | PETRODAR OPERATING COMPANY LIMITED

CONTRACTOR :

RANHILL INTERNATIONAL INC. PETROHEEOS SERVICES INTERNATIONAL JV

SUBJECT 1 LETTER OF REFERENCES

We, Ranhill International Inc do hereby take pleasure in issuing this letter of reference with regards to the above project and to confirm that KZU GROUP LTD., 12, "Prof. Hitato Vakarelski" str., 1700 Sofia, Bulgaria member of Consortium KZU HOLDING GROUP as our Subcontractor, performed the following works:

- Complete design of 40 storage tanks with capacity from 31.8 m² to 52 166 m² for Al-Jabeleyn Central Production Facility and Palogue Field Processing Facility. All storage tanks were designed according to API 650 standard.
- Shop fabrication of the steel structures of seven storage tanks with unit capacity of 52 166 m³ with total weight 5269 tons.

As a conclusion we would like to emphasize that KZU GROUP LTD is a credible partner with keeps strictly to their contract obligations and has performed all works with due dispence and efficiency in accordance with accepted practices recognized by the international bodies.

Yours faithfully, For and on behalf of,

Rambill International Inc. / Petroneeds Services International Joint Venture

JOHN ESPLITT SENSOR COMMERCIAL MANAGER

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210 Fine, Toron Service, III. (Sales No basis, 5000 Major Limino, Halama (1007-1018) (Principal Service).



KZU HOLDING GROUP



CERTIFICATES:

- The production and the personnel are certified according to EN ISO 9001, EN ISO 3834 for steel structures and pressure vessels.
- Directive 97/23/EC, ANNEX I, Par. 3.1.5, EN 764-5, Par. 6.2.2, AD2000 HP0, Par. 4
- Welding engineers are certified by International Institute of Welding.

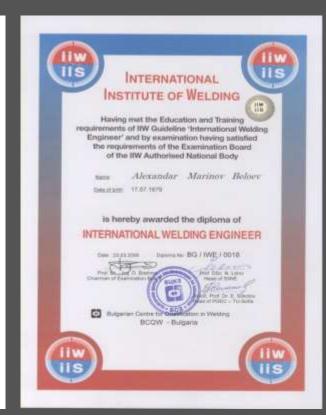


Certificates











Certificates





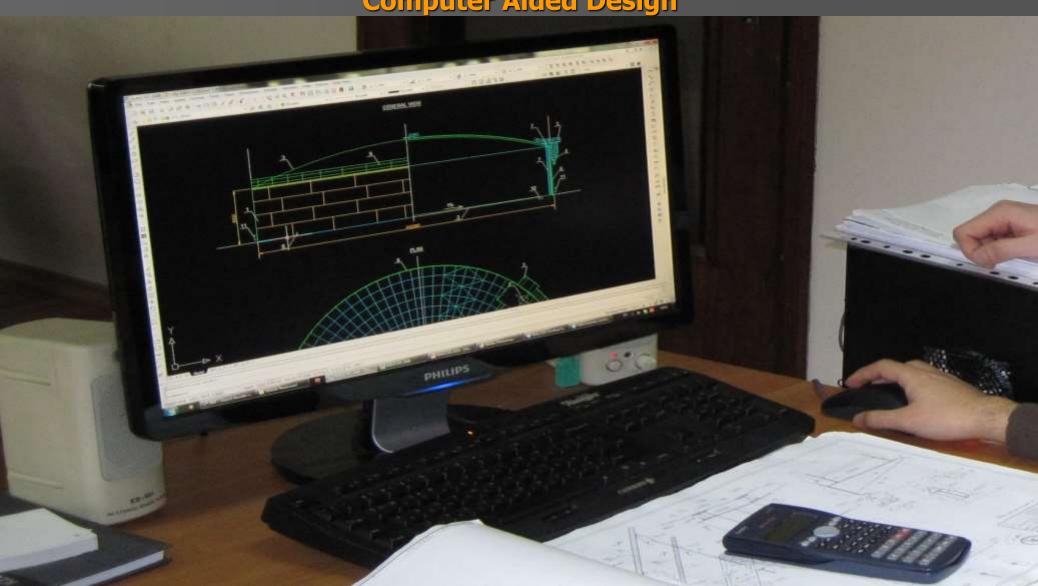




KZU HOLDING GROUP



Computer Aided Design





Consortium **KZU HOLDING GROUP Engineering and Research**



начия - вигобництви



VID: 504 S SS SSS 521 542 39

плавающие крышы различных конфигураций для крупногабаритных стальных резервуаров

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INCOMES THE PROPERTY AND ADDRESS OF THE PARTY новется саным распространенным резоени см для сведения к минимуму потерь при храни нии особо летучих пофтепродуктив. Исветорые конструктивные резнения одножения изапаю mas epiim foran prapaterrama KZU HOLDING GROUP и представлены в докладе [5] на колдоквиуме «Новые решении коиструкций, технология сооружения, анагностики и резонта стальных резервуиров», состояннямия в г. Вария (Bouraguin) a 2006 resty.

Для круппогабаритных резервуаров, дваметр котырых превышает 40 м, классическое рериение опроцечных плавающих крыт не яког ется удачивым, воскольку при эксплуктации и немебране из за ее небольшой изгибной жест вости возвижают большие деформации. Небла гоприятиме влияние на доформации мехобраны оказывыет тикже повышенная вегрокая нагрузка, характерная для стран Влижнего Востови.

В работе [6] рассмотрены два основных вида ребер жестисти - вольцевые и развильные, причем предпочения отдается рошильным. Это наиболее распространенный способ увеличения жесткости мембраны, принятын и Голландии, Германии, Австрии в США. Просчем и качестве ребер резименнуется использовать горичекатанын профики, папример, двугаврожее.

Нитересны предложения, излиженные в работе [6], по увежичению жествости момбраны радиальными ребрамы, а также их радиихие в рабету [5], где привежено исследование влияния установленных ребер на деформации мембраны. Орединяемы три принципнальные свемы с различным распольжением разнальных ребер на връсин (рис. 1).









M. Bennes mprangere KZU HOLDING GROUP, аслуженный деятем, тупны

Ca. Pyrns KZU HOLDING GROUP

Установлено также, что наиболее рациональным техническим решением увеличения жесткости мембраны является применения центразывают поитовы, приприпленного к менбране moneymax naumiconics epient, KZU HOLDING GROUP использовая чакое решение на практи ке. Папример, в Германии смонтирован круп-погабаритный резернуар объемы V = 80000 мг, анаметром D = 73 м с одинцечной изионныей

крышей и центральным поитоном (рис. 2). Примененное решение позволило получить значительный эффект, в том числе:

- достигнуто уменьшение воса крыши при-блилительно на 110 т по сравнению с весом двудечной крыши (с 500,950 т для двудеч ний да 400,750 т для однолечной);
- стабализировано попожение мембрина в проективы положении за счет веся шент-DARKSHOPS HOREFORES
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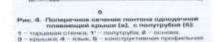


Предлагаемое техническое резилияе рекон струкции существующей конструкции поитсив позволяет не только устранить два постоянных концентратора напражений (рис. 4,а уалы I и III) веледствие ухода от резкого ваме шиния геометрии его поперечного сечения, но и существению облегчить условия работы торцевой стенки, на которую действует значительное сосредоточениям растигивающая сила (рис. 4,а - узел Ц). Новое решение впиструкции поитона:

- позволяет ввести новый стандартный унифицированный элемент (труба стальная электросварная по БДС 6360), использование которого дает визможность избежать иколного контроля материала, необходимого при применении листивой
- приводит в более заономичному попе речному сечению поитона и связи с уменьшением длины, во первых, торпеной стенки с 48 до ж8 и, во вторых, основы, крышки и конструктивной профильной подложки с B_s (рис. 4,a) до $B_s - R$ Cross., 4,651.
- улучшает технологию изготовления четы рех конструктивных элементов (основы, крышки, жилка, в тиске крайших периферийных листов мембраны), для которых нырезание заготовов по дуге большого радмуса заменяется более легкой, удобной и техполигически улучшенной примолиненной personality
- качественно улучшает сварные соединения основных узлов I и III, для которых вместо односторонней угловой сварки узна 1 при намене предусматривается спарка встык на подложной планке, а выесто двуксторенией угловой снарки укла III при замени предусмитривается свирки встык.

Кроме того, данное решение позволяет получить значительную экономию дистовой горачекатаной стали (стоимость и исхватка которой в мировом маситабе увеличиваются постоянно) – для одного круппогабаритного резервуяра с однолечной плавающей крышей число поитонов превышает 40 штук и на одной складской или производственной площадке, как правило, одновременно сооружается от 4 до 8 резеркух-12030





Выводы. Попученные данные и результаты исследования инповицили выполнить техники-экономическое сопоставление не только плавающих крыш различной конфигурации и дечности в цилом, но и предлагаемого нового технического решения торцевой вертикальной степия понтона в частности.

- [1] Weided Steet Tanks for Old Shorage, API 650. 2005. Рыководитер на проектирние на птоки
- цитер на проектиране на птоканене варти-цитенциями разврапара Сефии К.SV Инструация по проектированию стальных верти-
- вальных релириуюте для нефти и нефтегродуетов. Самара НЕФТЕХИМАТРОМА, 1070. Oberinlische zytrotreche Flechbeden Tanktrauwerke aus metallischen Werkspuffen, Deutsche Industrielle
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- repair technology and diagnostics used in steel terms.

 Varia, 2006. P.16-17. Zoko J. Zborniki restalowe na smore i gury. Warszawe Arkedy, 1986.

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Scientific publications.



KZU HOLDING GROUP



Fabrication facilities

KZU has a factory for steel structures in Varna, Zapadna Promishlena Zona

CNC cutting system



Automatic shot blasting line 3000 mm wide



KZU HOLDING GROUP



Main production bay





KZU HOLDING GROUP



Erection and Construction Activities



1x80000 m3 & 3x40000 m3 Double Bottom and Double Shell Storage tank farm — Vohburg Germany 1994 -1996



KZU HOLDING GROUP



Erection and Construction Activities



1x 40,000 m3 Molasses Storage Tank Apeldoorn Germany

Preparation of the roof for lifting with water



KZU HOLDING GROUP







11x10000 m3
Fixed Roof
Storage Tank
Farm -"Cepro"
Turnkey Proj.
Cerekvice Czech Republic
1999 – 2000



KZU HOLDING GROUP



Erection and Construction Activities



10 x 33.000 m3
Floating Roof
Crude Oil
Storage Tanks
Turnkey Proj.
Syria –
2004 - 2005



KZU HOLDING GROUP



Erection and Construction Activities



3 x 52 000 m3 Palouge FPF in Sudan – 2006



KZU HOLDING GROUP



Erection and Construction Activities



4 x 52 000 m3 Al-Jabalyn CPF Sudan – 2006



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Erection and Construction Activities



8 x 2.000 m3 & 8 x 1.000 m3 Prista Oil Storage Tanks Varna, Bulgaria 2008



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2 x 20.000 Floating Roof Storage Tanks Aqaba Jordan 2009





Consortium **KZU HOLDING GROUP**



Erection and Construction Activities Current Project in Motion



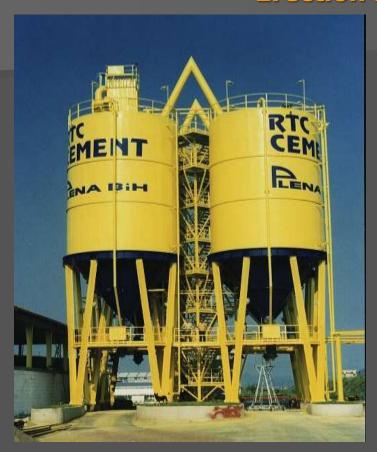




KZU HOLDING GROUP



Erection and Construction Activities













Ducts for DEVEN JSC as contractor of Foster Wheeler



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Erection and Construction Activities



Erection of Spherical Tanks Bourgas Bulgaria



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Erection and Construction Activities





Construction of forum roof of Munich airport Center West.

Construction of specialized silos for DEVEN JSC as contractor of Foster Wheeler



KZU HOLDING GROUP



Erection and Construction Activities



Ventilation Duct at NPP Kozlodui Complex Bulgaria



Contact info



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