

ZÁKAZNÍK / CUSTOMER

AIR LIQUIDE AGS GmbH

Stupeň / Level

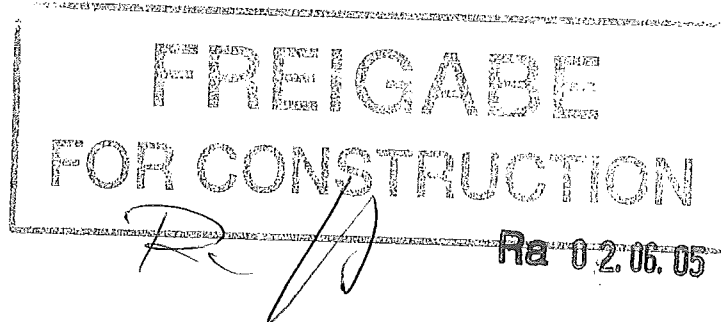
Dátum / Date

Kód / Code

Projekt pre realizáciu stavby
Construction design

máj 2005

792.87487

1. Technická správa
Technical reportHS HSV s.r.o. KOŠICE
Technický úsek

Projekt pre realizáciu stavby spracovaný pod z. č. 3821.2.002

PROJEKT SKUTOČNÉHO
VYHOTOVENIA

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1	20.05.2005	Ing.Zajac	<i>[Signature]</i>	Ing.Pavličko		Ing.Laš		
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Rev./ Rev.	Dátum / Date	Vypracoval Originator	Sign.	Kontroloval Checked	Sign.	Schválil Approved	Sign.	Pozn. / Note

Názov zákazky / Job :

KYSLÍKOVÝ APARÁT č. 9
ASU No. 9 KOŠICEHPK
engineering a.s.Němcovej 30
042 18 KOŠICE, SLOVAKIAUNIT 1 – COMPRESSING BUILDING
CONSTRUCTION DESIGN

Objekt / Unit :

Prev. celok / Unit :

Prev. súbor / Unit :

SO 002 - Kompresorová stanica
Compressor buildingProfesia / Profession :
Prev. jednotka / P. Unit:ARCHITEKTONICKO-STAVEBNÉ RIEŠENIE
ARCHITECTONIC-CIVIL ENGINEERING DESIGN

A

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STAVBA / JOB : KYSLIKOVÝ APARÁT č. 9 ASU No. 9 KOŠICE

OBJEKT / UNIT: SO 002 - Kompresorová stanica Compressor building

1. INTRODUCTION

This project has been prepared on basis of requirements presented by investor AIR LIQUIDE.

This part of the implementation documents deals with the suggested excavations and foundation for compressors in the compressor building. Static calculation for the whole structure will be part of the whole implementation project. The static calculation found in this part is only partial and is used for basements under compressors GAN, MAC and BAC.

The compressor building is an independent and one-floor building and its axial layout dimensions are 32.5 x 12.0 m. Clear height is 4.0 m in the lowest and 7.0 in the highest part of the building.

Fundament shapes are designed on basis of static calculations, equipment layouts and weights of machines and equipment.

Documents used

The following documents have been used:

- Project for building permit
- Tender documents
- Documents and requirements presented by AIR LIQUIDE
- Pavement level $\pm 0,00 = 225,15$ m n. m.

2. STRUCTURAL DESIGN

2.1 Excavations

Excavations in the building will be executed in accordance with drawing No. 792.87442. 4 pits will be excavated for the fundaments under the compressors. Excavations will be carried out in 2 stages – i.e. level -0.750 and level -1.750 .

The existing backfill under the new fundaments (axes a4-a3/b1,b4) will be dug out and compacted in layers to get $I_D = \min. 0.9$.

Upon request from AIR LIQUIDE, before starting with the construction of the fundaments for the compressors, it is necessary that static loading test of the subsoil be made over the area of the fundaments. The static loading test will be executed in accordance with Slovak Standard STN 736190 with a circular loading board.

Project documents take into consideration:

- Calculation board loadability in the fundament pit base: 0.450 MPa
- Volumetrical weight: 19.0 KN/m³
- Effective angle of internal friction: 37°
- Relative carrying capacity of gravel $I_d=0.7$
- Modulus of elastic compression $C_z= 35-50$ MN/m³
- Contact stress in the pit base in accordance with static calculation: 0.2 Mpa
- Test points are marked on the excavation drawings

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2.2 Results of executed engineering and geological survey.

From the survey it follows that the geology of the area is simple. There is a level of anthropogenic made-up ground running from the level of the ground down to 0.70 – 1.70 m. In the subsoil of the made-up ground there are medium compact and compact gravels mixed with G3 grade fine earth. In the layer of gravel earths, in various levels, places of cohesive earths of grade F6 were certified – low plasticity and rigid consistency clay.

The level of underground water in all survey boreholes was found at depths of 3.90 – 5.40 m under the level of ground and stabilized roughly at 0.10 m above the found level. The sample of underground water analyzed according to Slovak standard STN EN 206 – 1 does not contain any components aggressive to concrete.

The value of designed seismic acceleration $\alpha_g = 0,33 \text{ ms}^{-2}$ equals nearly to $\alpha_r = 0,30 \text{ ms}^{-2}$ (Art. 4.1.2.6) and it means that seismic effects on the building will be negligible. The given locality allows for the exclusion of higher values than the designed seismic acceleration α_g as a result of very unfavorable seismotectonic conditions. For more detailed description see the static calculation.

2.3 Fundaments

The fundaments in the building for compressors GAN-2 peaces, BAC – 1 piece, MAC – 1 piece will be made of concrete **B20**. For steel lists see the fundament drawings of compressors. Corners will be cut horizontally and vertically.

A peripheral fundament earthing will be prepared of steel wire with $\varnothing 10 \text{ mm}$ for earthing of the building, which will be placed 50 mm above the bottom pit base. The pieces will be connected by welding and this will create a closed circuit. From them, earthing wires FeZn 30x4 mm will run to each fundament for compressors GAN, BAC, MAC.

Warning:

The earthing of the compressors will be made during the placement of reinforcements and forming in accordance with the documents from the equipment supplier handed over by the investor. The vertical earthing strips will be placed at the edges of fundament forming.

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HPK engineering a.s.
Němcovej 30
042 18 KOŠICE, SLOVAKIA

ZÁKAZKA / CODE :

ZÁKAZNÍK / CUSTOMER: AIR LIQUIDE AGS GmbH

STAVBA / JOB : KYSLÍKOVÝ APARÁT č. 9 ASU No. 9 KOŠICE

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3. WORK SAFETY

In order to prevent any accident at the site, it is necessary to follow the instructions of the investor's representative and to observe:

- The provisions of the Decree of the Slovak Work Safety and Slovak Mining Office on Work Safety and Technical Equipment used in Construction Works No. 374/1990
- Law of the Slovak National Council No. 330/1996, Coll., on Safety and Protection of Health at Work
- Hygienic requirements of workplaces
- Current work, safety and technical regulations valid in U. S. Steel Košice.

Workers are required to be informed about these regulations

All comments found on the drawings also are included into the technical report

Košice, May 2005

Prepared by: Ing. Ján Zajac

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