

MASCHINENFABRIKEN **J.M.VOITH A.G.**
ST. PÖLTEN · ÖSTERREICH · FERNRUF: 2501 SERIE - KENNZAHL FÜR ST. PÖLTEN 027 42

POSTANSCHRIFT: J. M. VOITH A. G., ST. PÖLTEN, POSTFACH 168, ÖSTERREICH

FERNSCHREIBER 01510
DRAHTANSCHRIFT
VOITHWERK ST. PÖLTEN
WERKE
ST. PÖLTEN · TRAISMAUER
OBERGRAFENDORF



Messrs.
Cement Asbestos Products Company
CAPCO

Woodward / Alabama 35189
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U . S . A .

PLAINTIFF'S EXHIBIT

CAP-407

IHRE ZEICHEN

IHRE NACHRICHT VOM
4-9-1963

UNSERE ZEICHEN
SM. Eid.

TAG:

27-7-1964

BETRIFFT: Acceptance of order No. 40300 & 40301,
your order of 4-9-1963
characteristic: "Alabama I".

Dear Sirs,

We thank you once more for your valued order dated
Sept. 4th 1963 which we have booked according to our agreements
dated August 5th and 29th, and Dec. 4th 1963 under the
following conditions and of the below stated volume:

1./ PATENTS:

J.M. Voith A.G. agree to defend at their own expense
any suit instituted by any party against you, and hold
you free and indemnified of any damage or loss in con-
nection with such suit, as such a case may be based on
any infringements of patents or licences as regards the delive
and/or continuous use of the equipment you order.

2./ GUARANTEE:

J.M. Voith A.G. warrant that all materials, equipment
and work furnished pursuant to your order are free
from defects in material and workmanship, that they are
suitable and adequate for the purpose for which they
are designed and that they meet the requirements as
promised under the quotations submitted, for a period
of twelve months after their first satisfactory operation

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or for a period of 18 months after the date the last material under your order arrived on ship in U.S. port of unloading, whichever date is the earlier one.

This clause applies in full regardless of one-shift, two-shift, or three-shift operation of the equipment during the period indicated as long as there is no failure or mishandling caused or originated by your or any other personnel, or any deficiency of or interference in normal operation beyond the influence of J.M. Voith.

3./ SATISFACTORY OPERATION:

Having finished the erection J.M. Voith A.G. will send a production engineer who will effect setting into operation and running in of the plant and instruct the personnel properly.

Cement Asbestos Products Company, J.M. Voith A.G. and the Voith production engineer will come to a mutual agreement upon satisfactory operation.

As acceptable output the below stated production of a minimum tonnage of pressure pipes can be considered, of which Voith A.G. will guarantee that 90% of daily production will correspond to the ASTM C 296-56 T, Tentative Specifications and Methods of Test for Asbestos Cement Pressure Pipe.

The raw material being used in production for satisfactory operation is, as follows:

Asbestos : Canadian.Lake Asbestos or equivalent.
Asbestos : blue.Cap blue or equivalent.
Cement : Portland Cement.National Cement or equivalent.
Silica : Qualities as commonly used.It is requested that
the contents of aluminum (Al_2O_3) does not exceed 2%
and pure Silica (SiO_2) is not below 96%.

Samples of all raw materials are to be remitted by CAPCO for Voith's examination.



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The raw material for production will correspond to the samples sent to Voith A.G. and approved by them.

It is within the responsibility of CAPCO to provide raw material for production of the quality, indicated by Voith A.G.

Minimum output per 24 hours:

4 m pipes, class 150

nom. width	piece	t/24 h:
6	1250	80
12	454	102
16	290	110

The preparation plant is laid out for an output of more than 200 t of Asbestos Cement pipes per 24 hours. Also the drives of the pipe machine are suitable for a production of more than 200 tons. Development in the years to come will fully utilize these excess capacities.

4./ INSPECTION:

J.M. Voith A.G. agree, that the equipment and materials can be inspected at any time during manufacture in their plant, by your delegate, and that all information will be made available to your inspecting engineer which are asked for by him and are in connection with your order. No cost for such a delegation and inspection, however, is included in the prices quoted.

5./ DELIVERY:

J.M. Voith A.G. promises that the material and equipment ordered will be shipped from the plant starting July 6th 1964 ending Sept. 6th 1964. J.M. Voith A.G. agrees to a penalty for late delivery in the amount of 0.5 % per month limited with a maximum of 5 % of the contract price, commencing Oct. 6th 1964.



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6./ PAYMENT:

10% of the contract price as down-payment together with the order. As downpayment of the contract price of US-\$ 640.110 you have paid:

US-\$ 60.974,50
and US-\$ 3.036,50
together US-\$ 64.011,--

As by modification of the preparation plant the contract price will now be

US-\$ 637.785,-- the difference of
US-\$ 232,50 will be credited to you and
deducted from the future payments.

- 50% against presentation of final shipping documents;
- 20% not later than 6 months after the date of arrival on board ship in the US port of unloading.
- 10% when the pipe machinery will be operating satisfactorily (see also terms under "Satisfactory Operation")
- 10% at the end of the guarantee period (see also terms under "Guarantee")

If the AC. pipe machinery will be put into satisfactory operation at any time before 6 month after arrival of ship in US port of unloading, a total of 30% of the contract price will be up for payment.

7./ ERECTION:

J.M. Voith A.G. are prepared to provide full assistance for and during installation and erection of materials and equipment ordered. For such purpose they will delegate to site:

- 1 erection engineer at a rate of US-\$ 65 per day;
- 1 chief mechanic at a rate of US-\$ 45 per day;
- both from their plant in Austria



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further 1 service engineer and electrical supervisor
at a rate of US-\$ 65 per day from New York. *Le moment*

The daily fees are to be understood per calendar day absence from plant or head office and are based on a 40-hours week at an average of 8 hours per day. The travel costs on the basis of airplane round trip will be charged to the actual amount. As it is in the interest of both, CAPCO and J.M. Voith A.G., to finish the installation job fast and satisfactorily, sufficient and skilled workmen should be made available at site during erection by the CAPCO Company. If overtime work, exceeding 40 hours per week should be asked for, J.M. Voith A.G. will charge the following for such work, the charges to be applied on top of the daily fees mentioned before:

For work between 6 am and 8 am and between 5 pm and 8 pm on normal work days (Monday to Friday) and between 8 am and 5 pm on Saturdays.

US-\$ 9.00 per hour or part thereof for engineers

US-\$ 6.00 per hour or part thereof for chief mechanics,

for work between 8 pm and 6 am (night work) and during any time on Sundays or Holidays the latter as defined by the current labor contract of National Cement Co.

US-\$ 11 per hour or part thereof for engineers

US-\$ 8 per hour or part thereof for chief mechanics.

These fees do not include local transportation between lodging and job site. Free transportation will be provided by CAPCO not to exceed 30 total miles per day.

8. START OF PRODUCTION:

After erection has been completed, J.M. Voith A.G. will delegate to site an expert production engineer, who will start the plant, run-in the machinery in order to obtain satisfactory operation and train your crew accordingly, for a period of 8 weeks from



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the date the machinery is ready to start production. During this time a special service engineer from the New York office will also be present for a period of two weeks. The total fees for these services will be

lump sum.....US-\$ 5,500.
per complete pipe machinery.

Travel cost will be charged to the actual amount, as listed under item "Erection".

If during these eight weeks deficiencies should occur, for which the remedy would be the responsibility of J.M. Voith A.G. considering the terms of "Guarantee" and "Satisfactory Operation" and which would cause interruption and/or extension of said period, these eight weeks will be prolonged by the time of such interruption and/or extension without any additional cost to CAPCO. If within these eight weeks operation and manufacture of pipes under the terms of "Guarantee" and "Satisfactory Operation" was obtained and you wish to keep the production engineer longer, J.M. Voith A.G. are prepared to extend for an additional eight weeks, whereas US-\$ 80 per calendar day would be charged for any time within this period, exceeding the first eight weeks.

If you should desire any further extension exceeding the additional eight weeks, J.M. Voith A.G. are certainly prepared to give you any possible assistance, though they presently cannot guarantee, that the same production engineer would then be available for the entire period.

9./DRAWINGS AND TECHNICAL DATA:

J.M.Voith A.G. agree that for all items listed in the quotation and not showing prices, all necessary drawings and technical data will be given to you at no extra cost in order to procure the pertaining material locally. This includes mandrels. It applies also to motors you wish to buy at site. Such equipment will be combined with the design of the materials delivered from abroad by J.M. Voith A.G.

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J.M. Voith A.G. confirm that materials and equipment quoted will conform to US Standards wherever required or feasible in regard to erection and equipment maintenance. J.M. Voith A.G. agree to furnish you all drawings of the equipment they will manufacture in such time, as to enable CAPCO to proceed with the preparatory work at site before shipments arrive.

Especially Voith A.G. will make available:

Project drawing showing arrangement of pipe machinery
and building dimensions.

Plans of erection for the single machines with foundation data.

Specification for the autoclaves and drawings for the
autoclave-buggies.



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Our acceptance of order
No. 40301:



1 plant for the production of Asbestos Cement Pressure Pipes of 3 and 4 m length, of nom. width 3,4,5,6,8,10,12,14,16,18,20, and 24" for the pressure classes 100, 150 and 200 psi (7; 10,5 and 14 atue)

The plant consists of the following machines:

1./ 1 ASBESTOS CEMENT PIPE MACHINE

With 2 cylinder moulds, for the production of asbestos cement pipes of 3 and 4 m length.

CHARACTERISTICS OF THE MACHINE:

Length without pull-off carriage	approx. 9 m
width	approx. 11 m
height	approx. 7 m
felt speed infinitely variable	0-55 m/min.

1.1 2 COMPLETE CYLINDER MOULD PARTS

without stock feeding channel, with 2 cylinder moulds of 1000 mm dia., face 4185 mm, completely covered with bronze tissue, 2 spray tubes of brass with special fan spray nozzles made of Nirosta, with fastening and fittings as well as hose connections;

2 cylinder mould vats with cast iron lateral walls and troughs of steel sheet;

5 agitators with single drive and adjustable speed;

2 couch rolls 410 mm dia. with rubber covering of 25 mm thickness, incl. common fastening;

1 auxiliary suction box above the 2nd cylinder mould which is connected to the high vacuum plant;

3 dipping electrodes are controlling the stock inlet thus that the level in the cylinder mould vats remains almost constant.

A rake in front of each cylinder mould renders possible cross

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formation of the fibre by its movement to and fro.

Drive by means of gear motor.

2 stationary spray tubes with 2 pneumatic through-flow cocks.

2 electro-magnetic valves and 1 time limit relay are included in the delivery.

In front of each cylinder mould 2 stock regulating flaps are located.

1.2 1 PRESS PART

of steel sheet structure, with

1 breast roll 650 mm dia., made of c.i., ground, running in antifriction bearings;

2 complete felt guidances with all guiderolls and bearings;

2 suction boxes for the felt washing device, connected to the low-vacuum plant, made of steel sheet, incl. fittings;

1 high-vacuum suction box, complete with felt rollers. The suction tube can be considered also as swivelling axis for the couch roll fastening;

4 spray tubes with fastening and fittings for the top-and bottom felt washing device;

1 complete pressure carriage of specially sturdy design, with

2 press rolls of 130 mm dia., pressure beam and 5 pressure cylinders of 175 mm dia. The power of the pressure cylinders is transferred onto the pressure rolls by means of three pressure rollers each, via 5 pressure roll carriers. Knock out-spindles render possible quick and simple exchange of the pressure rollers;

2 felt guide rollers of 165 mm dia. with rubber covering and vulcanized-on rubber spiral which stretch the top felt in width.

The pressure carriage is moved up and down by oil servo-motors via threaded spindles. A removable guiding piece of the pressure carriage renders possible a quick felt exchange.

The wall thickness of the asbestos cement pipe is measured on both pipe ends and transmitted electrically to the indicating device in the control desk.



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A membrane valve with electro-magnetic valve and time limit relay on the high-vacuum suction box destroys the vacuum at the moment of starting in order to relieve the main driving motor.

1.3 GEARS OF THE MACHINE:

The drive of the machine is sufficient for an output exceeding 200 t per 24 hours.

1 Voith high-efficiency gear ZP 85
for the main drive (breast roll) with cross disc coupling and complete V-belt drive;
1 Voith-high-efficiency gear ZP 60
for the top felt drive, with flexible coupling;
5 Voith-high-efficiency gears Zf 10
for the drive of the agitators, incl. foundation frame and couplings.

1.4 1 TOP CAT WALK

of sectional iron, with grate and railing.

1.5 1 COMBINED ELECTRO-HYDRAULIC CONTROL DESK

for the central control of all electric and hydraulic movements. It includes the electric thickness indicating device, the felt speed indicator and the ammeters for the top-and bottom felt drive. Furthermore a counting mechanism is provided which gives a certain number of impulses at each breast roll rotation from which you can calculate the number of layers of the wound asbestos cement pipe.

1.6 ELECTRICAL EQUIPMENT:

The instruments installed in the switch board will be supplied by US-manufacturers as far as possible.

The elements of the Leonard-set are of European origin.

The electrical equipment comprises:

1 d.c. motor for the bottom felt drive, 32 kW, 588-2940 r.p.m., with cooling ventilator and tachodynamo.

1 d.c. motor for the top felt drive, 22 kW, 540-2840 r.p.m., with excessive speed, with cooling ventilator and tachodynamo.



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1 Leonard-converter set, comprising a three phase motor of 80 kW, main-and auxiliary exciting machine coupled with d.c. generator 60 kW, at $n = 1740$ r.p.m.

5 three-phase motors 5 HP, 1750 r.p.m., for the agitator drives;
2 gear motors for the rakes;

1 switch board for the asbestos cement pipe machine, comprising all instruments required for regulation and control;

1 switch board for the control of the auxiliary drives of the pipe machine (agitators, rakes, magnet valves)

The instruments and machines are provided with complete inside wiring but the cables between the machines on one hand and the switch board and control desk on the other hand are not included in the delivery. The drive of the machine is sufficient for an output exceeding 200 tons per 24 hours.

1.7 FOUNDATION RAILS:

for fixing the cylinder mould vats and the frame of the asbestos cement pipe machine.

1.8 1 MANDREL PARALLEL LOADING DEVICE

similar to our drawing No. 73.7-48, in 4 m design. This loading device is used up to a pipe outer diameter of 500 mm, mandrel outer diameter 400 mm.

1.9 1 FULL HYDRAULIC LIFTING-AND SWIVELLING DEVICE

for lifting, lowering and swivelling the mandrels to the left and right of the machine. All movements are effected by means of hydraulic servomotors which are controlled from the control desk. This equipment is required for the pipes of more than 500 mm outer diameter

1.10 2 SUPPORTING DEVICES:

made of cast steel



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1.11 2 TAKE-OFF CARRIAGES

one on the left side and one on the right side of the machine,
for taking off the wound asbestos cement pipe from the swivel-
led out mandrels. We are also supplying 2 pipe cradles size I.

1.12 VARIOUS PROTECTING COVERS

1.13 2 SETS OF FELTS

i.e. 2 bottom felts 1400 gr/m², approx. 15,5 x 4,5 m ,
high-synthetical,
2 top felts 1700 gr/m², approx. 17 x 4,3 m ,
low-synthetical. *HALDEMAN*

Drycon

2./ EQUIPMENT FOR THE 4 m ASBESTOS CEMENT PIPE MACHINE:

2.1 2 SWIVELLING PIVOTS 220 mm dia.

2.2 MANDRELS are provided by the customer according to our
drawings

2.3 SPARE PARTS for the asbestos cement pipe machine:

2 cylinder moulds,
3 pairs of felt guide roller bearings with cast spherical
casing and labyrinth rings,
8 sealing strips for the cylinder moulds,
3 sets of sealing rings,
60 sealing rings made of round rubber for the agitators,
4 spray tubes,
420 fan nozzles made of Nirosta,
12 m of high-pressure hose for 7 atue. working pressure,
80 mm dia.
20 piston sealing rings 175 mm dia.
8 V-belts approx. 3200 mm long for the main drive



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4 bearings for the cylinder moulds,
10 bearings for the agitators,
5 sets of installation parts for the agitator gears.

2.4 10 ENDLESS BIAS MESHES:

2.5 1 WIRE MOUNTING DEVICE: for mounting the wire hoses.

2.6 1 ASBESTOS CEMENT PIPE CALENDER

in 4 m design, for pipes of up to nom. width 16", according to our sketch No. SP 317183.1. The machine is equipped with two bottom calender rolls of 138 mm dia. and one top calender roll of 220 mm dia. The sturdy lateral stands include the pistons for hydraulic lifting of the top roll.

The drive of the calender rolls is effected by means of oil pressure motors. The necessary pressure oil is supplied by the pressure oil plant of the asbestos cement pipe machine.

3./ PRECURING:

3.1 1 TRANSPORT EQUIPMENT

for the transport of the asbestos cement pipes and mandrels through the precuring kiln.

3.2 1 FRAMEWORK

for the precuring kiln. The lining will be provided by the customer according to our statements.

3.3 1 LIFTING DEVICE

for lifting the mandrels after the asbestos cement pipes have been pulled off.

1 LOWERING DEVICE

for the mandrels for parallel loading. The mandrel transporting track above the kiln will be provided by the customer.



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4./ A.C.PIPES FINISHING MACHINES

4.1 1 AUTOMATIC ASEESTOS CEMENT PIPE LATHE size IIh

in 4 to 2 m design,
for a turning range of nom. width 50-600 mm, the other dimensions
and output data similar to our sketch No. 311601.1.

The a.c. pipe lathe is a full-automatic lathe and is working
in the same cycle as the pipe testing press. The lathe is
delivered with driving motors. The shortest pipe which can be
machined on this lathe is 1980 mm long.

Provided MOTORS: 1 driving motor N = 30 kW
n = 1750 r.p.m.
1 pump motor N = 11 kW
n = 1750 r.p.m.

1 set of special tools.

The compressed air for the Forkardt-chucking pivots is taken
from the compressed air mains (6 atue.).

Pertaining CHUCKING ELEMENTS:

2 chucking pivots incl.

2 sets of chucking segments for nom. width 3"

2 sets of chucking segments for nom. width 4"

2 chucking pivots incl.

2 sets of chucking segments for nom. width 6" class 100

2 sets of chucking segments for nom. width 6" class 150

2 sets of chucking segments for nom. width 6" class 200

2 sets of chucking segments for nom. width 8" class 100

2 sets of chucking segments for nom. width 8" class 150

2 sets of chucking segments for nom. width 8" class 200



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2 chucking pivots incl.

2 sets of chucking segments for nom. width 10" class 100

2 sets of chucking segments each for nom. width 10" class 150
and 200

2 sets of chucking segments each for nom. width 12", class 100,
150 and 200,

2 sets of chucking segments for nom. width 14"

2 sets of chucking segments for nom. width 14" class 150

2 chucking pivots incl.

2 sets of chucking segments for nom. width 16"

2 sets of chucking segments for nom. width 16" class 150

2 sets of chucking segments for nom. width 18"

2 sets of chucking segments incl. pendulum jaws for nom. width 20"

2 sets of chucking segments incl. pendulum jaws for nom. width 24"

4.2 1 ASBESTOS CEMENT PIPE TESTING PRESS size II/1

similar to our sketch No. 311606.1, of special design, for
160 tons pressure, suitable for testing a.c. pipes of nom.
width 50-600 mm and a pipe length of 2-4 m.

Up to nom. width 100 mm 3 a.c. pipes can be tested simultaneously
on this press, up to nom. width 200 mm 2 a.c. pipes and with pipes
of more than nom. width 200 mm one pipe only can be tested.

1 ADDITIONAL ROLLER TABLE UNIT is supplied.

MOTORS

1 electric motor of 2,2 kW for the drive of the press pump

2 electric motors of 7,5 kW for the drive of the filling pump,

1 electric motor of 5,5 kW for the mechanical drive

31 PAIRS OF PIPE HOLDERS

for nom. width 3,4,6,8,10,12,14,16,18,20,24".



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4.3 PIPE TRANSPORTING TRACK for

- 4.3.1. the A.C. pipe lathe size II h, with 2 fields approx. 4 m wide, consisting of the roller track top part with various rollers and hinged rails and the jack screws with connection shafts and hand crank and
- 4.3.2. for the A.C. pipe testing press size II/1, design as described subitem 4.3.1.

4.4 1 MULTIPLE JOINT CUTTING MACHINE

In 4 m design for dividing a joint pipe into the required joint length.

4.5. 1 JOINT LATHE size I

turning range for a joint outer dia. of 105-620 mm max.
The machine is equipped with a complete pneumatic chucking equipment.

The lathe is supplied with motor of 18,4 kW, 1800 r.p.m. and control equipment. The delivery includes only one set of special tools for starting the machine.

CHUCKING ELEMENTS:

- 1 set of special interchangeable jaws with pendulum attachments for a joint outer dia. of 105-250 mm;
- 1 set of special interchangeable jaws with pendulum attachments for a joint outer dia. of 250-400 mm;
- 1 set of special interchangeable jaws with pendulum attachments for a joint outer dia. of 400-600 mm.

4.6. 1 JOINT LATHE size II

turning range for a joint outer dia. of 440-1184 mm
otherwise as described under item 4.5.



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CHUCKING ELEMENTS:

1 set of special interchangeable jaws with pendulum attachments for a joint outer dia. of 440-565 mm;

1 set of special interchangeable jaws with pendulum attachments for a joint outer dia. of 665-925 mm.

4.7. 1 JOINT TESTING PRESS

for joints up to nom. width 24", with electric and hydraulic equipment, complete with all valves, fittings and pipe lines as well as with pressure tank and motor of 3 kW, 1750 r.p.m.

23 PIPE HOLDERS

Various switch boards of steel sheet design already are included in the machine items and will be equipped with US-instruments as far as possible.

The machines are provided with complete inside wiring, the wires between the machines on the one hand and the control desk and switch board on the other hand are not included in our delivery.

5./ AUXILIARY UNITS

5.1 1 STATIONARY FULL-AUTOMATIC COMPRESSOR PLANT

will be provided by the customer.

Required amount of delivery approx. $3 \text{ Nm}^3/\text{min.}$, i.e. referred to 20°C and 1 ata, max. pressure 10 atue.

An air precleaner and one compressed air container of 4000 l capacity are required.



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5.2 1 CENTRIFUGAL VENTILATOR:

for the low vacuum on the asbestos cement pipe machine,
air capacity approx. 150 Nm³/min.,
static pressure 18,4 mm Hg, complete with motor of 11 kW,
3400 r.p.m.

5.3 1 PRESSURE OIL SUPPLY PLANT

for the asbestos cement pipe machine,
for 32 atue. operational pressure.
The delivery includes the oil container with 2 mounted pressure
oil pumps (one of them as stand-by pump), the air tank, a compressor
for loading and refilling the air tank with compressed air, all
fittings and measuring instruments, the piping of the plant
itself and the motor of 3,8 kW at 1750 r.p.m. and two motors
of 19 kW at 1150 r.p.m.

The pipe lines from the pressure oil plant to the asbestos
cement pipe machine and to the pipe calender are not included
in our delivery.

5.4 1 VACUUM PLANT

for the high vacuum on the asbestos cement pipe machine, complete,
mainly consisting of:

1 water ring air pump size 10,
delivery 60 m³/min at 1 atm., otherwise according to our sketch
No. 1240 but with Voith gear E 25.

The motor of approx. 100 kW at 1750 r.p.m. will be provided by
the customer.

1 vacuum container of vertical design, of approx. 3 m³ capacity
complete with manometer, non-return flap and piping within
the unit, incl. a centrifugal pump with motor for removing the
water; pump and motor are coupled directly and mounted on a
common foundation plate.



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Motor power 5,5 kW at 1750 r.p.m.

The piping from the vacuum tank to the asbestos cement pipe machine is included in the delivery.

1 water separating container approx. 1000 mm inside dia.,
1400 mm high.

5.5 2 BACKWATER PUMPS

i.e.:

1 pump for the backwater of the cylinder moulds

$Q = m^3/\text{hour}$

1 pump for the backwater of the felt washing device

$Q = 120 m^3/\text{hour}$

Delivery at a head of approx. 15 m, complete with three-phase motor of 1150 r.p.m.

6 spare gyroscopes are included in the delivery.

5.6 2 PRESSURE WATER PUMPS

will be provided by the customer.

DATA OF PUMP

delivery approx. 1800 l/min.,

pressure 6-7 atue.

5.7 1 BALANCER

in 4 m design, for the cylinder mould transport.

5.8 2 CYLINDER MOULD TRANSPORT CARRIAGES

are to be provided by the customer according to our drawings.

5.9 VARIOUS SWITCH BOARDS and OPERATION DESKS

for the stationary compressor plant

centrifugal ventilator

pressure oil supply plant

vacuum plant

back water pumps

pressure water pumps

will be provided by the customer according to our statements



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5.10 1 PAIR OF FUNNEL FILTERS

will be provided by the customer according to our drawings.

5.11 1 TESTING DEVICE

for rubber rings will be provided by the customer according to our drawings.

5.12 2 FORK LIFTS

will be provided by the customer according to our statements (5 tons carrying capacity and 4 m lifting height).

5.13 75 SMALL DRYING CRADLES

will be provided by the customer according to our drawings.

6./ WET PREPARATION for the asbestos cement pipe plant

(our acceptance of order 40300 comprises all parts of this preparation plant).

On account of the last alterations in the preparation plant as per project drawing No. 7203-74 the following delivery-scope is resulting:

6.1 1 EDGE RUNNER size C

as per our sketch No. 7202-43, equipped with cover of steel sheet through which furnishing of material is effected by means of a bucket elevator, with compressed air operated discharge scraper and two compressed air operated discharge flaps. Preset control by means of time-limit relays. Furnish 400-500 kg.

The motor to be provided by the customer is to be 50 HP at 1800 r.p.m., 440 volts and 60 cycles.

Besides our delivery comprises a starting coupling, a device for wet treatment; water supply is accomplished via a container with dipping electrodes



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6.1.1 1 BUCKET ELEVATOR

axle distance approx. 6,5 m, capacity approx. 18 tons/hour
for conveying asbestos into the edge runner.

Motor capacity 5 HP, transporting speed 1,05 m/sec.

This bucket elevator incl. motor is to be provided
by the customer.

6.1.2 1 CONTAINER

arranged underneath the edge runner for accomodating the
complete contents of the edge runner, equipped with double-
edged worm including drive (regulating gear) N = 3 HP
440 volts, 60 cycles.

6.2 1 BLOWER

with conveyor line and dust filter, Q = approx. 60 m³/min.,
pressure approx. 600 mm w.c.

This item is to be provided by the customer i.e. complete
with motor N = approx. 25 HP.

6.3 1 SILLO FOR WET ASBESTOS

with cyclone and dosing device, capacity approx. 8 m³.

Drive of dosing device by gear motor and chain N = 1,5 HP
drive of silo discharge N = 5 HP.

6.4 1 BELT CONVEYOR

for transporting the asbestos from the silo to the scale
with belt, approx. 5,5 m axle distance x 500 mm width,
capacity approx. 100 kg/min. Motor capacity approx. 2 HP
This belt conveyor incl. motor is to be provided by the
customer

6.5 1 CHARGING BALANCE WITH BELT

for wet asbestos, type FBW-H-I-800, with dosing device and
recording counter.

Capacity approx. 100 kg/min = 6 tons/hour,
scale range for peaks up to 8 tons/hour.

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Accuracy range between 2-7 tons/hour

Drive by gear-brake motor N = 1,5 HP

6.6 1 DAILY SILO FOR CEMENT

for approx. 70 tons of loose cement. The silo should be equipped with compressed air fittings for avoiding arching of cement.

The cement silo is to be provided by the customer.

6.7 1 DAILY SILO FOR SILICA

analogous to item 6.6.

6.8 1 CHARGING BALANCE WITH BELT:

for cement analogous to item 6.5, but of 400 kg capacity per min, i.e. 24 tons per hour,

scale range for peaks up to 30 tons per hour.

Accuracy range 7,5 to 26 tons.

6.9. 1 CHARGING BALANCE WITH BELT for silica analogous to item 6.8.

6.10 2 REEDLER PLANTS to be provided by the customer,

capacity approx. 20 tons per hour, approx. 8 m axle distance
i.e.:

1 plant for cement

1 plant for silica.

chain speed approx. 15m/min. Motor capacity 7,5 HP

6.11 2 FEEDING CHUTES

designed as swivelling intermediate container, of steel sheet, mounted on the two pulpers for furnishing asbestos, cement and silica, with two compressed air cylinders each for swivelling the container and opening the closing flaps.



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6.12 2 TURBOPULPERS size III

as per our sketch No. 7202-57, of 3000 l effective capacity, approx. 3500 l total capacity, comprising a welded trough, with inserted stuffing boxes and protection sleeves of metal on the stuffing box spots;
sturdy steel shaft with mounted rotors of welded steel sheet; amply dimensioned self-aligning roller bearings in vertical bearing casings.

The delivery of the turbopulper comprises the complete belt drive, protection covering and feeding chute of welded steel sheet;

one special pneumatically-operated stock slide valve each of nom. width 12" for discharge;

one starting coupling each.

The driving motors for the two pulpers of 150 HP each, 1800 r.p.m. 440 volts, 60 cycles including rails are to be provided by the customer.

4 rotors mounted on 2 shafts will be supplied as spare parts.

6.13 WATER SUPPLY

of both pulpers comprising:

1 water tank of approx. 3m³ capacity with 2 dipping electrodes and

1 electrode control instrument.

1 pneumatic spring-operated valve nom. width 6" for water supply.

2 pneumatic spring-operated valves for water outlet.

These three valves are to be provided by the customer.

6.14 1 HORIZONTAL PUMP

type RSHG 3329/20, Q = 200 m³/hour for transporting the stock from the pulpers to the agitator chest. Rotor disk and insert bushes in the casing are provided with sintered-on hard metal layer.

This pump is supplied with motor, coupling and foundation plate.



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Manometric head = 4,5 m,
driving motor N = 30 HP, n = 1200 r.p.m., 440 volts, 60 cycles,
pump speed n = 1200 r.p.m.

6.15 1 COMPLETE AGITATOR CHEST

similar to our sketch No. 7202-87, of welded steel sheet,
including overflow tank, effective capacity approx. 12 m³,
with dipping electrodes for level control.

Agitator speed 6 r.p.m.

Drive by gear motor N = 10 HP.

6.16 1 STOCK PUMP

for transporting the stock from the agitator chest into the
overflow container,

type KwKs 65-30, Q = 40 m³/hour,

manometric head 5 m,

complete with motor N = 3 HP, n = 900 r.p.m.

coupling and foundation plate, pump speed n = 900 r.p.m.

Impeller and installation parts of chilled casting of chromium-
nickel.

6.17 1 DUST EXHAUSTION DEVICE WITH MOTOR

to be provided by the customer, for the asbestos feeding spot
on the edge runner, capacity approx. 50 m³/min.,
pressure 250 mm w.c.

6.18 1 LOW-VOLTAGE SWITCHBOARD

1 CONTROL BOARD

completely steel sheet enclosed, total length 4000 mm, depth 600 mm,
height 2000 mm, with all installed instruments for manual and
automatic control of the stock preparation plant, including
illuminated wiring diagram, ~~will be provided by the customer~~



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6.19 VARIOUS WATER CONDUITS

valves, slide valves, blower conveyor lines, dust filter, compressed air lines are to be provided by the customer if not explicitly stated in this quotation.

In comparison with our quotation No. SM 1119 AZ dated Oct. 3rd 1963 the delivery is reduced by:

1 inclined conveyor belt for asbestos for the edge runner and
1 dosing device incl. drive at the container of the edge runner.

The price difference will be put on the credit side of your account.



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LIST OF WEIGHTS AND PRICES

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weight	price
approx.kg.:	US-\$:

Our acceptance of order No. 40301 -
asbestos cement pipe plant 4/3 m:

1./ 1 2-cylinder mould a.c. pipe machine 4/3 m

1.1. 2 cylinder mould parts	}	88.400,-	176.100,-
1.2. 1 press part			
1.3. Gears of the machine			
1.4. 1 top cat walk			
1.5. 1 combined electro-hydraulic control desk			
1.6. Electrical equipment			
1.7. Foundation rails			
1.8. 1 mandrel parallel loading device			
1.9. 1 full hydraulic lifting-and swivelling device			
1.10 2 supporting devices			
1.11 2 take-off carriages			
1.12 Various protecting covers			
1.13 2 sets of felts			

2./ EQUIPMENT FOR THE ASBESTOS CEMENT PIPE MACHINE 4 m/3 m:

2.1. 2 swivelling pivots	3.800,-	3.180,-
2.2. mandrels - on site supply of drawings free of charge		
2.3. Spare parts for the a.c. pipe machine	4.980,-	13.150.-
2.4. 10 endless bias meshes		2.100,-
2.5. 1 wire mounting device	100,-	130,-
2.6. 1 a.c. pipe calender	4.000,-	14.000,-

TOTAL:

101.280,- 208.660,-

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weight approx,kg	price US-\$:
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5./ AUXILIARY UNITS

5.1. 1 stationary full-automatic
compressor plant - on site

5.2. 1 centrifugal ventilator

660,-

1.300,-

5.3. 1 pressure oil supply plant

3.900,-

8.200,-

⑤ 5.4. 1 vacuum plant without motor
for high vacuum pump

7.200,-

13.020,-

⑤ 5.5. 2 backwater pumps (1 small) 4/1 large

2.000,-

3.850,-

5.6. 2 pressure water pumps - on site

5.7. 1 balancer

350,-

150,-

5.8. 2 cylinder mould transport
carriage
pertaining drawings

5.9. Various switch boards and
operation desks - on site

5.10 1 pair of funnel filters -
pertaining drawings

5.11 1 testing device - on site

5.12 2 fork lifts - on site

5.13 75 small drying cradles -
pertaining drawings

TOTAL:

14.110,-

26.520,-

5.5. 2 felt washing pump shipped

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weight price
approx.kg.: US-\$:

3./ PRECURING:

3.1. 1 transport equipment	56.000,-	115.000,-
3.2. 1 framework		
3.3. 1 lifting device and lowering device		4.000,-

TOTAL:

56.000,- 119.000,-
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4./ A.C. Pipe FINISHING MACHINES:

4.1. 1 automatic asbestos cement pipe lathe size IIh in 4 to 2 m design	15.100,-	65.800,-
Chuckling elements for pipe nom.width 3 - 24"		12.100,-
4.2. 1 asbestos cement pipe testing press size II/1	12.600,-	19.300,-
31 pairs of pipe holders	2.670,-	2.900,-
4.3. Pipe transporting track		
4.31. 1 track for a.c. pipe lathe size IIh	1.950,-	3.800,-
4.32. 1 track for a.c. pipe testing press size II/1	1.950,-	3.800,-
4.4. 1 multiple joint cutting machine	4.200,-	15.500,-
4.5. 1 joint lathe size I	3.500,-	9.400,-
Chuckling elements		2.950,-
4.6. 1 joint lathe size II	4.600,-	12.800,-
Chuckling elements		2.050,-
4.7. 1 joint testing press	1.100,-	4.100,-
23 pipe holders	2.980,-	8.200,-

TOTAL:

50.650,- 162.700,-
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weight approx.kg.:	price US-\$:
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6./ Our acceptance of order No.40300 -
Preparation plant:

6.1.	1 edge runner size C without motor	17.100,-	14.965,-
	6.11. 1 bucket elevator - on site		
	6.12. 1 container	980,-	2.790,-
6.2.	1 blower - on site		
6.3.	1 silo for wet asbestos	4.100,-	7.390,-
6.4.	1 belt conveyor - on site		
② 6.5.	1 charging balance	1.050,-	2.905,-
6.6.	1 daily silo for cement - on site		
6.7.	1 daily silo for silica - on site		
⑤ { 6.8.	1 charging balance with belt for cement	1.050,-	3.850,-
6.9.	1 charging balance with belt for silica	1.050,-	3.850,-
6.10.2	reedler plants - on site		
6.11	2 feeding chutes	1.100,-	1.450,-
⑤ 6.12	2 turbopulpers size III without motor	8.800,-	28.800,-
⑤ 6.13	Water supply	1.300,-	3.260,-
6.14	1 horizontal pump	1.100,-	3.410,-
⑤ 6.15	1 complete agitator chest	8.000,-	10.200,-
6.16	1 stock pump	400,-	985,-
6.17	1 dust exhaustion device - on site		
6.18	1 low-voltage switchboard with 4 panels	960,-	12.600,-
6.19	Various water conduits - on site		

TOTAL:

46.990,- 96.455,-

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RECAPITULATION :
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	weight approx.kg.:	price US-\$:
1./ 1 2-cylinder mould a.c. pipe machine 4 m/3m)	101.280,-	208.660,-
2./ Equipment for the asbestos cement pipe machine 4 m/3 m)		
3./ Precuring	56.000,-	119.000,-
4./ Asbestos cement pipe finishing machines	50.650,-	162.700,-
5./ Auxiliary units	14.110,-	26.520,-
6./ Preparation plant	46.990,-	96.455,-
TOTAL:	269.030,-	613.335,-
seaworthy packing and freight fob Hamburg		24.450,-
final contract sum		637.785.-
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Above indicated final sum is to be understood fob Hamburg including seaworthy packing and freight, but without customs duty, without other taxes and charges and without erection. These prices are fixed prices.

Thanking you for your esteemed order and assuring you of most conscientious execution we beg to remain, Dear Sirs,

Yours faithfully,

J.M.VOITH
AKTIENGESELLSCHAFT

Hu/SM.R.VK.AEC.
SMP.SMK.Sachb.Krz.EB.