



ENGINEERING DIVISION

PAGE NO. 1
 ITEM NO. 460-02-20272
 A.R. NO. 80-701
 JOB NO. 15-2-2

MATERIAL SPECIFICATION

Process BDP P.O. No. _____ Req. No. _____
 Unit/Area Main Rack (02) Drawing No. _____
 Service Convey 7-2588 wet-cake from Originator JWC Date 7/23/80
centrifuge to table feeder Approval _____
 Revised By JWC Rev. No. 1 Date 8/6/80
JWC 2 8/14/80

20272

DESCRIPTION	JWC	3	10/13/80
	JWC <i>JWC</i>	<i>DL</i>	4* 12/8/80

This specification is for a screw conveyor to be installed at the Rohm and Haas Bayport Inc. plant.

I. Scope

These specifications are to provide for the engineering design, fabrication, testing, and delivery of a 14" diameter ribbon-type screw conveyor for conveying intermediate 7-2588 wet-cake.

II. Objective

The screw conveyor is to be capable of receiving intermediate 7-2588 wet-cake (60-65% solids) from two centrifuges at a rate of 300*lb/min. from each unit, and transferring the wet-cake into a table feeder with a minimum of hold-up in the conveyor. Attached diagram 460-02-20272 depicts the approximate equipment lay-out and dimensions.

III. Process Stream Specifications

A. Wet-cake (7-2588)

- | | |
|-------------------------|--|
| 1. Temperature | 20-25°C |
| 2. Bulk density | Approximately 0.4 gm/cm ³
(75% solids, loose) |
| 3. Moisture | 35-40% |
| 4. Rates (37% moisture) | 300* lb/min. for two
minutes every 15-30 minutes
(each centrifuge) |

B. Cleaning Solution

Conveyor may be filled occasionally with a 10% sodium hydroxide/water solution to dissolve solids build-up for maintenance access to the internals.

Each piece of equipment is to be metal or plastic tagged with Rohm and Haas Company AR Number, purchase order number, and item number.

25 Revised 9/11/74 *Outerb*



ENGINEERING DIVISION

PAGE NO. 2
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 Unit/Area Main Rack (01)
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JWC 3 10/13/80
JWC 4* 12/8/80

DESCRIPTION

IV. System Specification

A. Materials of Construction

1. Metal

All process-wetted parts to be 304L SS.

2. Gasket, Seals, O-Rings

Process compatible materials are Teflon, ethylene-propylene rubber, Viton, Buna-N, Neoprene. Asbestos gaskets (Rohm and Haas Standard 42-420) may be used for piping. Vendor to list materials of construction for all elastomer parts.

B. Process Parameters

	<u>Operating</u>	<u>Design</u>
1. Temperature (°C)	20-25	100
2. Pressure (Inches H ₂ O)	2	5
3. Rates (2 centrifuges, lb/min)	600	600
4. Speed (RPM)	Vendor to specify	

C. Process Stream Handling (see attached diagram)

The wet-cake will drop by gravity from two centrifuge chutes into opposite ends of the screw conveyor. The conveyor will convey the wet-cake toward the center to drop out by gravity through a chute directly into the table feeder.

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025



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Process BDP

P.O. No. _____ Req. No. _____

Unit/Area Main Rack (02)

Drawing No. _____

Service Convey 7-2588 wet-cake from
centrifuge to table feederOriginator JWC Date 8/6/80

Approval _____

Revised By JWC Rev. No. 1 Date 8/6/80JWC 2 8/14/80

DESCRIPTION

JWC	3	10/13/80
JWC	4*	12/8/80

D. Mechanical Items1. Nozzles/Opening

<u>Service</u>	<u>Number</u>	<u>Size</u>	<u>Location</u>
Wet-cake Inlets	2	12" flange	Top, ends
Wet-cake Outlet	1	12" x 18"	Bottom, middle
Sight Glass	1	6"	Top, middle
Nitrogen Purge	2	1/2" NPT	Top, ends
Drains	2	1" NPT	Bottom, ends
Cleaning Inlet	1	1 1/2" pad	Top, end

2. Drive Unit*

Vendor to supply motor and speed reduction unit. Preferred motor supplier is Reliance. Motor to be a "high efficiency unit".

3. Top Cover

The top cover between inlet nozzles shall be constructed with wing-type holding nuts so as to provide quick removal for inspection.

4. Conveyor Supports

The conveyor should have bottom supports capable of supporting a flooded conveyor (10% caustic solution, s.g. = 1.11) Conveyor may be hung from overhead steel beams.

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PAGE NO. 4
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JWC 3 10/13/80

DESCRIPTION	JWC	4*	12/8/80
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5. Internals

a. Finish

The finish for the screw flights, trough internal surface, and shaft shall be at least an ASA "fine finish" (Rohm and Haas Std. 99-004)

b. Shaft

All set screws, bolts, nuts, etc., shall be flush with the shaft surface so as to minimize protrusions which will be a source of solids build-up during operation.

The shaft should be supported only with end bearing (with no intermediate shaft bearings). Bearings should be external to conveyor trough.

Seals may be purged with nitrogen if necessary, to prevent solids or occasional caustic solution contamination.

6. Instrumentation

Vendor to include a "zero-speed" switch capable of supplying an external remote signal to indicate shaft rotation. Rohm and Haas will supply all other instrumentation.

7. Conveyor Operation

Vendor shall provide complete documentation of conveyor capabilities, mechanical operation, important mechanical features, process design parameters, ratings, safety features, spare parts list, and maintenance operating instructions.

8. Electrical Classifications

All electrical and instrumentation items shall be suitable for Class I, Group D, Division 2 Hazardous Area.

9. Conveyor system shall be of vapor-tight construction.

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025 Revised 9/11/74 *oag*



ENGINEERING DIVISION

PAGE NO. 5
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Drawing No. _____

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Approval _____

Revised By	<u>JWC</u>	Rev. No.	<u>1</u>	Date	<u>8/6/80</u>
	<u>JWC</u>		<u>2</u>		<u>8/14/80</u>
	<u>JWC</u>		<u>3</u>		<u>10/13/80</u>
	<u>JWC</u>		<u>4*</u>		<u>12/8/80</u>

DESCRIPTION

E. Utilities Available

- | | |
|---------------|--|
| 1. Nitrogen | 100 psig, ambient temp. |
| 2. Electrical | Power - 460 volts/3 phase/60 Hz
Control - 120 volts/1 phase/60 Hz |

F. Additional Items

ROHM AND HAAS STANDARD

- | | |
|--------------------|--------|
| 1. Motors | 22-741 |
| 2. Internal finish | 99-004 |
| 3. General | 10-001 |
| 4. Piping | 42-420 |

G. Quote and Delivery

The quote should be broken down by major items (e.g. motor*, gear reducer, motor screw/trough, etc.). Quote should include approximate schedule for delivery after receipt of purchase order and approval of design drawings.

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025 Revised 9/11/74 *025*