

NARCO CONFIDENTIAL-RESTRICTED



NARCOCAST E.S. FINE (TROWEL)

Made at: Farber, MO

PRODUCT LIFE: JULY 13, 1961 TO JAN. 17, 1986

ASBESTOS DATES: AUG. 9, 1963 TO JULY 11, 1978

NARCOCAST E.S. FINE (TROWEL) MIXES: 353

353A

353B

353-03

CONFIDENTIAL — RESTRICTED

NORTH AMERICAN REFRACTORIES COMPANY **NARCO CONFIDENTIAL-RESTRICTED**
MIX SHEET

BRAND NARCOCAST E.S. FINE (Trowel)

MIX NO. 353-03

PLANT Farber, Mo

DATE October 3, 1983

MIX

BATCH

	RMS No.	Raw Material	Sizing	Wt. %	Batch
1	012	Calcined Flint Clay	-7½M	66.8	2670#
2	013	60% CA Cement		28.2	12-94# bags
3	016	Tennessee #5 Ball Clay		5.0	4-50# bags
4				100.0	3998#
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					

MIXING INSTRUCTIONS _____

IN-PROCESS CONTROL SPECIFICATIONS _____

SCRAP DISPOSITION/REWORKING

1) Approved Landfill

2) 10% bled into virgin batch

BRAND NARCOCAST E.S. FINE (Trowel)MIX NO. 353-03R T Farber, MoDATE October 3, 1983

FINISHED PRODUCT SPECIFICATIONS

NARCO CONFIDENTIAL-RESTRICTED

PROPERTY

TEST METHOD

SPECIFICATIONS

Screen analysis on: 20M		30-35%
35M		
200M		
After Casting:		
Bulk Density (Dried at 230°F		
MOR for 24 hours)		400 psi
Water To Cast		
me of Initial Set		
Working Time		

HANDLING, STORAGE, PACKAGING, ...

Shelf Life: 12 months

SAFETY PRECAUTIONS

Potential crystalline silica from clays(approved dust respirator)

APPROVED AGK RESEARCH
APPROVED WLSM OPERATING
APPROVED J. F. Gordon PLANT

REPLACES MIX SHEET DATED 7-11-78

REASON FOR CHANGE

Mix Sheet updated

NORTH AMERICAN REFRACTORIES COMPANY

Mix Instructions **NARCO CONFIDENTIAL-RESTRICTED**

Plant	FARBER, MO.	Date	JULY 11, 1978
Brand	NARCOCAST E.S. FINE (TROWEL)	Mix No.	353B
Process	CLASS B CASTABLE FOR TROWELING	Burn	
		Shrinkage	

Mix

BATS (DRY)	-7½M	70%
REFCON CEMENT		30%
TENN. NO. 5 BALL CLAY	A.F.	5% (ADDED)

Special Instructions STENCIL "TROWEL" ON BAGS.**Control Specifications**

M/R DRY 230°F 400 PSI MIN.

WET SCREEN 30 TO 35% CUMULATIVE

ON 20 MESH

ELIMINATION OF ASBESTOS,

ROLANDSHUETTE CEMENT AND

"STIFF MUD" DESIGNATION FOR BATS

Replaces Sheet Dated

8/9/63 (MIX NO. 353A)

Approved Robert F. Hays ResearchApproved [Signature] OperatingApproved [Signature] Plant

NORTH AMERICAN REFRACTORIES COMPANY

Mix Instructions **NARCO CONFIDENTIAL-RESTRICTED**

Plant Farber, Mo. Date Aug 9, 1963
 Brand Narccast F.S. Fine (Trowel) Mix No. 35.3 A.
 Process _____ Burn _____
Class B castable for troweling Shrinkage _____

Mix

Stiff Mud Bats (Dry)	7 1/2 M	70 %
Rolandsmitts Cement	-	30 %
Jenn. No. 5 Ball Clay	A.F.	5 % (added)
Asbestos 7K05 (J.M.)		1 % (added)

Special Instructions Stencil "TROWEL" on bags.
Reason for change: To improve trowelability

Control Specifications

M/R by 230°F 400 psi Min
Wet screen, 30 to 35% cumulative
on 20 Mesh

Replaces Sheet Dated

7/13/61
1/1/62
1/1/62

Signed	Engineering
Approved <u>F. W. Schneider</u>	Research
Approved <u>C. F. Whitfield</u>	Operating
Approved <u>J. R. Walters</u>	Plant

i.

()

DATE July 13, 1961

MIX NO. 353

BURN

SHRINKAGE

MIX

STIFF HUD BATS (DRY)	7 1/2 M	70 %
Rolandshutte Cement		30 %
Tenn. No. 5 Ball clay	A.F	5 % (added)

stencil "Travel" on base

M/R slr, $\gamma 30^\circ$ F. 900 psi min.

2300°F Relent 1.5% Lin. SHR. MAX.

Wet screen, 30 to 35% Cumulative
on 20 mesh

APPROVED *F. P. Schneider* Research

APPROVED *A. F. Whitham* Operating

APPROVED (P. L. Atkins) Plant

new this



NARCO CONFIDENTIAL-RESTRICTED

NARCOLITE

(Now LITECRETE HS 2055)

Made at: Farber, MO

PRODUCT LIFE: FEB. 14, 1955 TO JAN. 17, 1986 (NARCOLITE)

ASBESTOS DATES: MARCH 24, 1961 TO JULY 11, 1978

MIXES ATTACHED: 326

326 Revised

WO-144

326A

326B

326C

326-04

CONFIDENTIAL — RESTRICTED

NORTH AMERICAN REFRACTORIES COMPANY

MIX SHEET

NARCO CONFIDENTIAL-RESTRICTED

BRAND LITECRETE HS 2055

MIX NO. 326-04

PLANT Farber, Mo

DATE 8-24-84

MIX

BATCH

	RMS No.	Raw Material	Sizing	Wt. %	Batch
1	119	Mixed Bats	-7½M	33.2	570#
2	009	Gleason Clay	A.F.	14.6	5-50# bags
3	015	Glass Cullet	A.F.W.	2.9	1-50# bag
4	013	60% CA Cement		49.3	9-94# bags
5				100.0	1716#
6					
7		To be Added			
8	017	<u>Perlite</u>		21.0*	12 30# bags
10					
11					
12					
13					
14					

MIXING INSTRUCTIONS *Add one 4-cubic foot bag of Perlite for every 143 pounds of batch weight. The Perlite to be added is on a volume basis, therefore the wt.% is an estimate based on 30 lbs. per bag.

N-PROCESS CONTROL SPECIFICATIONS _____

SCRAP DISPOSITION/REWORKING

1) Approved landfill

2) 10% bled into virgin batch

NORTH AMERICAN REFRACTORIES COMPANY

Mix Instructions

NARCO CONFIDENTIAL-RESTRICTEDPlant FARBER, MO.Date JULY 11, 1978Brand NARCOLITEMix No. 326CProcess INSULATING CASTABLEBurn Shrinkage

Mix

PERLITE (BROUK 77-37)		18.0%
BATS (DRY)	7½M	27.2%
GLEASON CLAY	A.F.	12.0%
FERROFRIT #3278	POWDERED	2.3%
REFCON CEMENT		<u>40.5%</u>
		100.0%

Special Instructions FOR CONVENIENCE IN BATCHING AN AVERAGE BAG WEIGHT
FOR THE PERLITE SHOULD BE DETERMINED AND PERLITE THEN ADDED BY VOLUME
(BAGS) IN AN AMOUNT EQUIVILENT TO THE DESIRED WEIGHT.

Control SpecificationsM/R DRY 230°F 200 PSI MIN.C/C DRY 230°F 500 PSI MIN.

ELIMINATION OF ROLANDSHUETTE
CEMENT ALTERNATIVE AND OF
ASBESTOS; CHANGE IN FRIT BRAND.

Replaces Sheet Dated

5/11/63 (MIX NO. 326B)Approved Robert F. Hemm ResearchApproved Blalsh OperatingApproved OB Plant

NORTH AMERICAN REFRACTORIES COMPANY

Mix Instructions

NARCO CONFIDENTIAL-RESTRICTED

Plant Fisher, Mo.Date June 11, 1963Brand NarcaliteMix No. 326 B

Process _____

Burn _____

Insulating castable

Shrinkage _____

Mix

Perlite (Frank 77-37)		18 %
Stiff mud Beta	7 1/2 M	27.2
Gleason Clay	A.F.	10.2
Frit PIF59	Powdered	2.3
Refcon or Rekrudette Cement		40.5
Asbestos 7K05 (V-H)		1.8 %

Special Instructions Based on W.C. 210 B

Asbestos should be shredded by hand into mixer.
Reason for change: To add Refcon Cement

Control Specifications

m/R Dry 730°F 200 PSI Min.
C/C dry 730°F 500 PSI Min.

Replaces Sheet Dated

Nov. 7, 1961

Signed

Engineering

Approved M. Schneider ResearchApproved R. F. Whitford OperatingApproved A. R. Walters Plant

NORTH AMERICAN REFRACTORIES COMPANY

NARCO CONFIDENTIAL-RESTRICTEDMIX INSTRUCTIONS

<u>PLANT</u>	<u>FARBER, MO.</u>	<u>DATE</u>	<u>NOVEMBER 7, 1961</u>
<u>BRAND</u>	<u>NARCOLITE</u>	<u>MIX NO.</u>	<u>326 A</u>
<u>PROCESS</u>		<u>BURN</u>	
<u>INSULATING CASTABLE</u>		<u>SHRINKAGE</u>	

MIX

PERLITE (BROUK 77-37)		18.0 %
STIFF MUD BATS	7½ M	27.2
GLEASON CLAY	A.F.	10.2
PIF59 FRIT	POWDERED	2.3
ROLANDSHUETTE CEMENT		40.5
7K05 ASBESTOS (J-M)		1.8 %

SPECIAL INSTRUCTIONS BASED ON W.O. 210 BTHE ASBESTOS SHOULD BE SHREDDED BY HAND INTO MIXER.CONTROL SPECIFICATIONSM/R DRY 230°F 200 PSI MIN.C/C DRY 230°F 500 PSI MIN.

Replaces Sheet Dated

5/14/57APPROVED F. W. SCHROEDER ResearchAPPROVED R. F. WHITFORD OperatingAPPROVED C. P. WALTERS Plant*C. P. Walters*

NARCO CONFIDENTIAL-RESTRICTED

NORTH AMERICAN REFRACTORIES COMPANY

MIX INSTRUCTIONS

PLANT <u>Farber, Mo.</u>	DATE <u>March 24, 1961</u>
BRAND <u>Narcalite</u>	MIX NO. <u>W. O. 144</u>
PROCESS	BURN
<u>Insulating Castable</u>	SHRINKAGE

EXPERIMENTAL MIX

Stiff mud Bets	- 7 1/2 mesh	32%
Mo. Plastic	- 20 mesh	11%
Rolandshutte Cement		44%
7K05 Asbestos (J-M)		2%
No. 2. Vermiculite		11%

SPECIAL INSTRUCTIONS 7H05 or 7K05 asbestos can be used

CONTROL SPECIFICATIONS

Weight/cu ft dry 130-50-55

W/c dry 130° 130-200 psi

SIGNED

G. E. Johnson Jr.
Research

NARCO CONFIDENTIAL-RESTRICTED
NORTH AMERICAN REFRACTORIES COMPANY

MIX INSTRUCTIONS

PLANT Farber, Mo

DATE Feb. 4, 1955

BRAND NARCOLITE

MIX NO. 326

PROCESS _____

BURN _____

Insulating Castable

M I X

SHRINKAGE

61.5 % Bats (D.P) - 7 M

3.5 % Plastic - 30 M

35.0 % Atlas Lumnite Cement.

Add

17.5 % Vermiculite - 6 on 20 M

0.1 % C.M.E. (H.V.)

SPECIAL INSTRUCTIONS Ship in 50 lb. waterproof bags. Also
bagged and shipped as CHRISCOLITE

CONTROL SPECIFICATIONS

Replaces Sheet

Dated 1/24/55

SIGNED N. B. Krivorian Engineering

APPROVED W. B. Schaefer Research

APPROVED R. F. Whithell Operating

APPROVED C. P. Walters Plant

OCT 1 1956

622
NARCO CONFIDENTIAL-RESTRICTED

AMERICAN REFRACTORIES COMPANY

MIX INSTRUCTIONS

PLANT Farber, Mo.

DATE May 14, 1957

BRAND NARCOLITE

MIX NO. 326

PROCESS

BURN

Insulating Castable

M I X

SHRINKAGE

Bats - 8 M - 48 %
Missouri Plastic 20 M - 9 %
Portland Cement
(with 3 % Calcium Chloride) - 31 %
Vermiculite 8 on 30 M. 12 %
(No 2 grade Zonolite)

SPECIAL INSTRUCTIONS

CONTROL SPECIFICATIONS

Wt. per cubic foot 48-53 lbs.
M/R dry - 150 psi Min.

SIGNED H. P. K... Engineering

APPROVED F. H. Schneider Research

APPROVED R. F. Whid... Operating

APPROVED C. P. Walter PLANT

Replaces Sheet

Dated 2/4/55