CMP-A - Ceiling Multi Pattern Diffuser (Aluminium)

Model: CMP-A Ceiling Multi Pattern – Aluminium

The Series CMP-A diffusers are a Louver Face Ceiling Diffuser of extruded aluminium construction, with removable core, available in a range of sizes and air distribution patterns, to suit numerous and varied requirements.

The Series CMP-A is a light weight alternative to the well established CMP-S louver face diffuser which has been an industry stable for many years.

Construction

Series CMP-A diffusers are ruggedly constructed entirely of aluminium, are lightweight and have no heavy cast, or moulded components. Precision combination corner gussets and braces keep

mitres to a hairline and aluminium rivets hold the core components rigidly together, eliminating the possibility of warping, flexing, or rattling.

Panel diffusers (Type 2 on page 144D), are mechanically secured to steel panels with the Unique Holyoake mounting pins, eliminating gaps and producing a super-fine junction between panel and extrusion.

Installation

The diffusers frame assembly is installed in the ceiling opening and attached and sealed to the supply duct. The extensive range of cores, all snap in to the frame surrounds, with nickel plated spring steel thumb clips.

Finish

All Holyoake aluminium diffusers receive a three stage preparation, prior to final finishing; cleaning, chemical etch and drying. This preparation ensures powder coat adhesion and precludes powder peeling, or flaking after installation.

Standard colour is Holyoake White.

Features

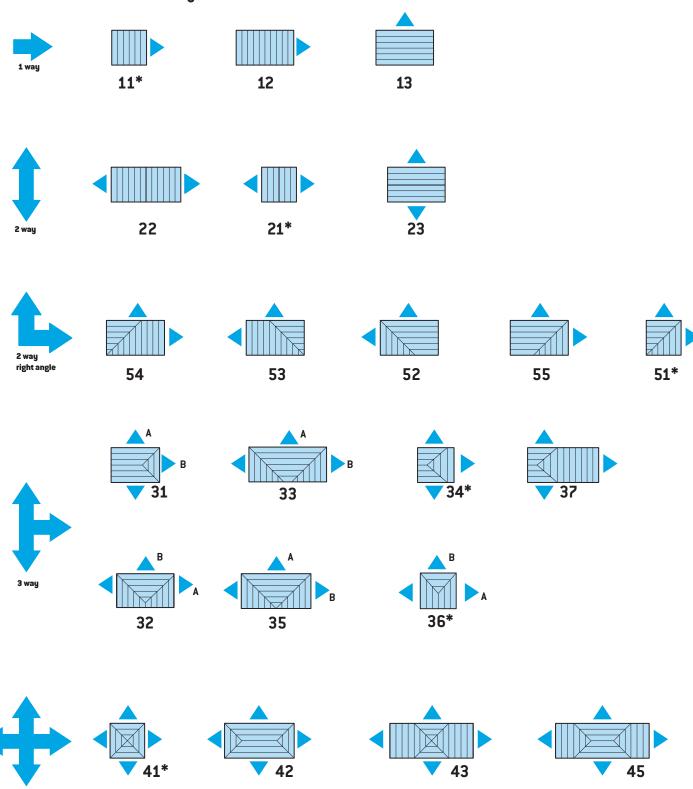
- All aluminium construction.
- Precision mitred corners.
- · Selection of frame styles.
- Variety of throw patterns.
- Snap-in interchangeable cores.
- Tough powder coat finish.
- Lightweight Premi-Aire™ and galvanised cushion head boxes available.

Ceiling Diffuser

Due to a policy of continuous development and improvement the right is reserved to supply products which may differ slightly from those illustrated and described in this publication.

Reflected Ceiling Plan Views – CMP

Model: CMP and CMPH Core Styles



^{*} Square core patterns.

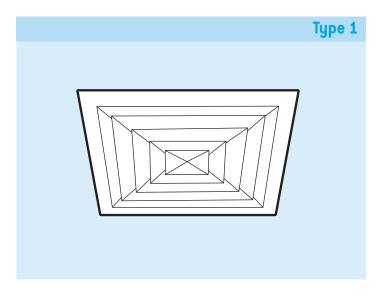
Diffusers are only available in standard sizes as listed in performance data.

CMP-A – Ceiling Multi Pattern Diffuser (Aluminium)

Model: CMP-A — Ceiling Multi Pattern Diffuser (Aluminium)

Standard Flange Frame.

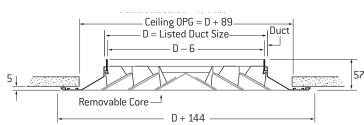
Designed for surface mounting on all types of ceilings, as well as lay-in ceiling tile applications.



Construction

Aluminium:

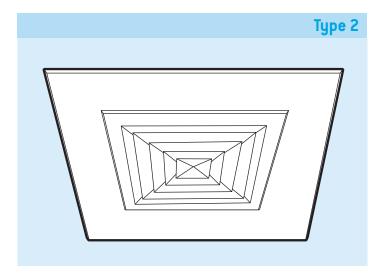
- 0.75mm extruded 6063-T5 aluminium outer frame.
- 0.55mm removable aluminium core.



Note: A Steel construction CMP-S version may be available, please contact your local Holyoake branch.

Panel Diffuser.

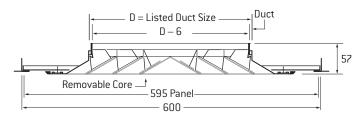
Lay-in type for installation in suspended "T-Rail" type ceilings. Standard panel overall size is 595×595 to suit a 600×600 grid. Size 450×450 has an overall face size of 595×595 . It therefore does not require a panel in a 600 grid and fits "T-Rail" spacing with clearance*.



Construction

Aluminium:

- 0.75mm extruded 6063-T5 aluminium outer frame.
- 0.55mm removable aluminium core.
- * Note: 0.75 mm Steel Panel on CMP-A Type 2. Product weights are shown on page 150D.

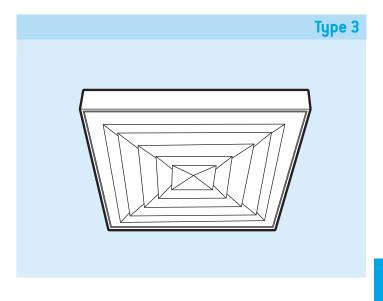


Ceiling Multi Pattern Diffuser (Aluminium) – CMP-A

Model: CMP-A — Ceiling Multi Pattern Diffuser (Aluminium)

Drop Frame.

Lowers the face of the diffuser below the ceiling line. Can be used to reduce smudging, or against obstacles to minimise drafts. Can be supplied in any height from 50 - 81mm, but unless otherwise specified, frame height of 50 mm will be furnished. Special order only.

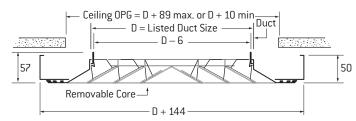


Construction

Aluminium:

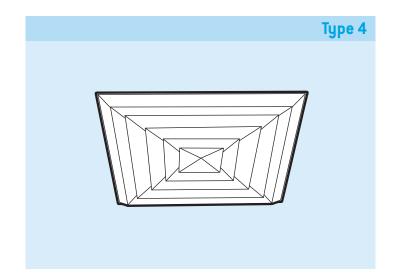
0.75mm extruded 6063-T5 aluminium outer frame.

0.55mm removable aluminium core.



Bevelled Drop Frame.

Smartly styled bevelled type surround reduces ceiling smudging. For all surface mounting applications. Special order only.



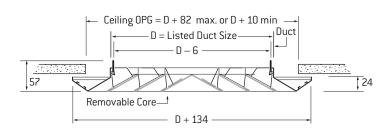
Construction

Aluminium:

0.75mm extruded 6063-T5 aluminium outer frame.

0.55mm removable aluminium core.

Product weights are shown on page 150D.



P - Octave Band Sound Data

Model: CMP Supply

L	P	OCTAVE BANDS, Lw										
NC	A-Scale	125	250	500*	1000	2000	4000					
15	19	38-40-42-44	30-32-34-35	27-27-27-27	25-25-25-25	21-19-17-15	9-5 – –					
20	24	40-42-44-46	33-35-37-38	31-31-31-31	30-30-30-30	27-25-23-21	17-13-9 –					
25	29	43-45-47-49	37-39-41-42	35-35-35-35	35-35-35-35	32-30-28-26	24-20-16-11					
30	34	46-48-50-52	40-42-44-45	40-40-40-40	39-39-39-39	37-35-33-31	31-27-23-18					
35	39	49-51-53-55	44-46-48-49	44-44-44	44-44-44	42-40-38-36	38-34-30-25					
40	44	52-54-56-58	48-50-52-53	48-48-48-48	49-49-49-49	47-45-43-41	45-41-37-32					
45	49	55-57-59-61	51-53-55-56	53-53-53	54-54-54-54	52-50-48-46	51-47-43-38					
50	54	58-60-62-64	55-57-59-60	57-57-57	59-59-59	57-55-53-51	56-52-48-43					

^{*} Add 4dB for Aluminium Diffuser

1.49m² Duct
0.372m² Duct
0.092m² Duct
0.023m² Duct

Model: CMP Return

L	P		OCTAVE BANDS, Lw									
NC	A-Scale	125*	250	500	1000	2000	4000					
15	18	24-29-34-40	26-27-28-29	25-26-27-28	25-25-25-25	22-22-22-21	18-17-16-16					
20	23	28-33-38-44	30-31-32-33	29-30-31-32	30-30-30-30	27-27-27-26	24-23-22-22					
25	28	33-38-43-49	35-36-37-38	34-35-36-37	35-35-35-35	32-32-31-30	29-28-27-27					
30	33	37-42-47-53	39-40-41-42	38-39-40-41	39-39-39-39	37-37-36-35	35-34-33-33					
35	38	41-46-51-57	43-44-45-46	42-43-44-45	44-44-44-44	42-42-41-40	41-40-39-39					
40	43	46-51-56-62	48-49-50-51	47-48-49-50	49-49-49-49	47-46-45-44	46-45-44-44					
45	48	50-55-60-66	52-53-54-55	51-52-53-54	54-54-54	52-51-50-49	51-51-50-50					
50	53	54-59-64-70	56-57-58-59	55-56-57-58	59-59-59-59	57-56-55-54	56-56-55-55					

^{*} Subtract 9dB for Aluminium Diffuser

1.49m² Duct
0.372m² Duct
0.092m² Duct
0.023m² Duct

Notes on Sound Performance Data

The NC values are obtained from the performance tables on pages 148D to 157D, which are based on 8 dB room attenuation re 10^{-12} watts. The octave band dB values are sound power levels (Lw) re 10^{-12} watts. In the tables above, four values are shown for each octave band and NC value, with the first value for a duct area of $0.023 \, \text{m}^2$, second $0.092 \, \text{m}^2$, third $0.372 \, \text{m}^2$ and fourth for $1.49 \, \text{m}^2$.

The A-scale dB values are based on a 8 dB room attenuation re 10^{-12} watts. Lp - Sound pressure level, dB re 0.0002 microbars.

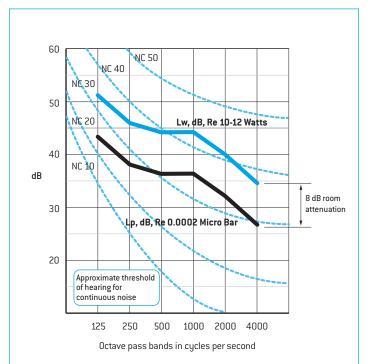
Lw - Sound power level, dB re 10^{-12} watts.

Example

A 300 x 300 CMP supplies $0.378 \, \text{m}^3/\text{s}$. List the complete sound analysis for this condition. (A 300 x 300 CMP has a duct area of $0.090 \, \text{m}^2$).

The Performance Table on Page 148D shows that a 300×300 CMP supplying 0.378 m³/s satisfies an NC35. The CMP Supply table above lists the following A-scale and octave band sound levels for an NC35 and 0.092 m² duct.

dB,	Lp	Octave Bands - dB, Lw							
NC	Α	125	250	500	1000	2000	4000		
35	39	51	46	44	44	40	34		



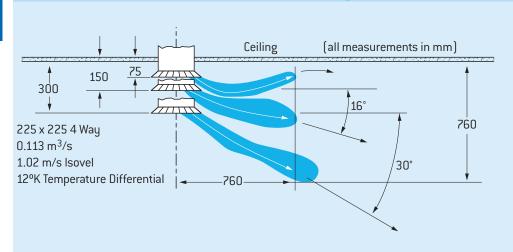
Above octave band sound power levels (Lw) plotted (top curve). The lower curve that satisfies an NC 35 was obtained by subtracting 8 dB (Room Attenuation) from each octave band sound power level.

Performance Data CMP and CMPH — CMP

Notes on Throw Performance Data

- 1. The CMP and CMPH Performance Data in the tables on the following pages (Pages 148D - 157D and 160D - 165D) applies when the outlet is mounted near the ceiling with ceiling effect.
- 2. Where no ceiling effect is present the horizontal throw will be about 25% less than shown in the tables.
- 3. The subsequent downward projection should be taken into account.

Effects of Mounting Position on Air Pattern



RECOMMENDED MAXIMUM AIR FLOW										
Ceiling Height, m.	2.40	2.70	3.00	3.60	4.20	4.80				
Air Flow (m³/s) per side	0.095	0.165	0.260	0.425	0.660	0.755				

This data is based on 12°C Δt (temperature differential) during cooling.

General Performance Notes

1. Pressure: All pressures are in Pa (N/m²)

> TP = Total Pressure -SP = Negative Static Pressure

2. Throw: Maximum throws are to a terminal velocity of

0.25 m/s, middle to 0.5 m/s, and minimum to

 $0.75 \, \text{m/s}.$

3. Sound: The NC values are based on a room absorption

of 8 dB, re 10^{-12} watts and one steel diffuser. For aluminium diffusers, apply the following

corrections to the listed data:

	NC = Listed + 3
Supply:	TP = Listed x 1.5
	THROW = Listed x 1.0
	NC = Listed + 2
Return:	−SP = Listed x 1.0

CMPH: Where table shows -, NC is below 20.

4. Return Factors: If the unit is used as a return inlet, the performance data is obtained by applying the return factors shown on each table in the following manner:

- a. Sound: Add the factor shown to the NC value listed.
- b. Negative Static Pressure: Multiply the return factor by the total pressure

Return Example:

150 x 150 CMP with 0.071 m³/s being returned through the unit. Return NC = 20 + 1 = 21

Return Pressure (-SP) = TP x 1.1 = 25 (1.1) = 27.5 Pa (N/m²)

5. Size in mm: This is the Diffuser Listed Duct Size or Nominal

Neck Opening

Symbols

m³/s	Cubic metres per second	Pt	Total pressure Pa (= Ps + Pv)
m/s	Metres per second	Δ t	Temperature differential, room to supply
Vk	Outlet velocity, m/s	Throw	Distance air travels from diffuser to a given Vt.
Vt	Air stream terminal velocity, m/s		Tables show throws to Vts of 0.75 (min);
Ak	Diffuser or register net jet area, m²		0.5 and 0.25 (max) m/s.
AD or An	Inlet duct or neck area	NC	Noise criteria. Ratings are based on sound
Ps	Static pressure, Pa		power level (SWL) re. 10 ⁻¹² watts minus 8 dB
Pv	Velocity pressure, Pa		room attenuation in all frequency bands.

Note

All ceiling diffusers, seismic restraints are required, but not supplied.

Size		Patterns	Neck Vel m/s	1.57	2.10	2.62	3.15	3.67	4.19	4.72
in mm	Return	NC+1	TP Pa Total m³/s	6 0.036	11 0.047	18 0.059	25 0.071	35 0.083	45 0.094	57 0.106
	Factors	-SP=1.1TP	NC	- А В	7 A B	14 A B	20 A B	24 A B	28 A B	32 A B
150 x 150		41	m³/s side throw m	0.009 1.2 1.5 2.1	0.012 1.5 1.8 2.4	0.015 1.8 2.1 2.7	0.018 1.8 2.1 3.1	0.020 2.1 2.4 3.4	0.024 2.1 2.4 3.4	0.027 2.4 2.7 3.7
		♣ 36	m³/s side throw m	0.009 0.013 1.2 1.5 1.5 2.1 2.1 3.1	0.012 0.018 1.5 1.8 1.8 2.4 2.4 3.4	0.015 0.022 1.8 2.1 2.1 2.7 2.7 4.0	0.018 0.026 1.8 2.1 2.1 3.1 3.1 4.3	0.201 0.031 2.1 2.4 2.4 3.4 3.4 4.6	0.024 0.036 2.1 2.4 2.4 3.4 3.4 4.9	0.027 0.040 2.4 2.7 2.7 3.7 3.7 5.2
		A 34 *	m³/s side throw m	0.018 0.009 1.8 1.2 2.4 1.5 3.1 2.4	0.024 0.012 2.1 1.5 2.7 1.8 3.7 2.7	0.029 0.015 2.4 1.8 3.1 2.1 4.3 3.1	0.036 0.018 2.7 1.8 3.4 2.1 4.6 3.4	0.041 0.021 2.7 2.1 3.7 2.4 4.9 3.7	0.047 0.024 3.1 2.1 4.0 2.4 5.2 4.0	0.053 0.027 3.4 2.4 4.3 2.7 5.5 4.3
AD 0.023 m ²	21	51	m³/s side throw m	0.018 2.1 2.4 3.4	0.024 2.4 2.7 4.0	0.029 2.7 3.1 4.6	0.036 3.1 3.4 4.9	0.042 3.4 3.7 5.2	0.049 3.4 4.0 5.5	0.053 3.7 4.3 6.1
		11	m³/s side throw m	0.035 2.4 3.1 4.3	0.047 2.7 3.4 4.9	0.060 3.1 4.0 5.5	0.071 3.4 4.3 6.1	0.083 3.7 4.6 6.4	0.094 4.0 4.9 7.0	0.107 4.3 5.2 7.3
	Return Factors	NC+3 -SP=1.3TP	Total m³/s NC	0.080 - A B	0.106 11 A B	0.133 18 A B	0.160 24 A B	0.186 28 A B	0.212 32 A B	0.239 36 A B
225 x 225		41	m³/s side throw m	0.020 1.5 1.8 2.7	0.026 1.8 2.1 3.1	0.033 2.1 2.4 3.4	0.040 2.1 2.7 3.7	0.046 2.4 2.7 4.0	0.053 2.4 3.1 4.3	0.059 2.7 3.4 4.6
223		36	m³/s side throw m	0.020 0.030 1.5 2.1 1.8 2.7 2.7 3.7	0.026 0.040 1.8 2.4 2.1 3.1 3.1 4.3	0.033	0.040 0.060 2.1 3.1 2.7 3.7 3.7 5.2	0.046 0.070 2.4 3.4 2.7 4.0 4.0 5.5	0.053 0.080 2.4 3.4 3.1 4.3 4.3 6.1	0.060 0.090 2.7 3.7 3.4 4.6 4.6 6.4
		34 *	m³/s side throw m	0.034 0.023 2.1 2.1 2.7 2.4 3.7 3.4	0.044 0.031 2.4 2.4 3.1 2.7 4.3 4.0	0.056 0.039 2.7 2.7 3.4 3.1 4.9 4.6	0.067 0.046 3.1 3.1 3.7 3.4 5.2 4.9	0.078 0.054 3.4 3.4 4.0 3.7 5.5 5.2	0.089 0.062 3.4 3.4 4.3 4.0 6.1 5.5	0.100 0.070 3.7 3.7 4.6 4.3 6.4 6.1
AD 0.051 m ²	21	51	m³/s side throw m	0.040 2.7 3.1 4.6	0.053 3.1 3.7 5.2	0.067 3.4 4.3 5.8	0.080 3.7 4.6 6.4	0.093 4.0 4.9 6.7	0.106 4.3 5.2 7.3	0.119 4.6 5.5 7.9
		11	m³/s side throw m	0.080 3.4 4.3 5.8	0.106 4.0 4.9 6.7	0.133 4.6 5.5 7.6	0.160 4.9 6.1 8.2	0.186 5.2 6.4 8.8	0.212 5.5 7.0 9.5	0.239 6.1 7.3 10.1
	Return Factors	NC+5 -SP=1.4TP	Total m³/s NC	0.142 - A B	0.189 14 A B	0.236 21 A B	0.283 27 A B	0.330 31 A B	0.378 35 A B	0.425 39 A B
300 X 300	. 40.0.0	√ △ △ △	m³/s side throw m	0.035 1.8 2.4 3.1	0.047 2.1 2.7 3.7	0.059 2.4 3.1 4.3	0.071 2.7 3.4 4.5	0.083 2.7 3.7 4.9	0.094 3.1 4.0 5.2	0.106 3.4 4.3 5.5
300		36	m³/s side throw m	0.035 0.053 1.8 2.4 2.4 3.1 3.1 4.3	0.047 0.071 2.1 2.7 2.7 3.4 3.7 4.9	0.059 0.088 2.4 3.1 3.1 4.0 4.3 5.5	0.071 0.106 2.7 3.4 3.4 4.3 4.6 6.1	0.083 0.124 2.7 3.7 3.7 4.6 4.9 5.4	0.094 0.142 3.1 4.0 4.0 4.9 5.2 7.0	0.106 0.160 3.4 4.3 4.3 5.2 5.5 7.3
		B 34 *	m³/s side throw m	0.053 0.044 2.4 2.4 3.1 3.1 4.3 4.3	0.071 0.059 2.7 2.7 3.4 3.4 4.9 4.9	0.088 0.074 3.1 3.1 4.0 4.0 5.5 5.5	0.106	0.124	0.142 0.118 4.0 4.0 4.9 4.9 7.0 7.0	0.160 0.133 4.3 4.3 5.2 5.2 7.3 7.3
AD 0.090 m ²	21	51	m³/s side throw m	0.071 3.1 3.7 5.2	0.094 3.7 4.3 6.1	0.118 4.3 4.9 7.0	0.142 4.6 5.2 7.6	0.165 4.9 5.5 7.9	0.189 5.2 6.1 8.5	0.212 5.5 6.4 9.2
		11	m³/s side throw m	0.142 4.0 4.9 7.0	0.189 4.6 5.5 7.9	0.236 5.2 6.4 9.2	0.283 5.5 6.7 9.8	0.390 6.1 7.3 10.4	0.378 6.4 7.6 11.3	0.425 7.0 8.2 11.9
	Return Factors	NC+5 -SP=1.9TP	Total m³/s NC	0.220 7 A B	0.295 16 A B	0.368 23 A B	0.441 29 A B	0.515 33 A B	0.590 37 A B	0.661 41 A B
375 X		√ 41	m³/s side throw m	0.055 2.1 2.7	0.074 2.4 3.1	0.092 2.7 3.4	0.110 3.1 3.7	0.129 3.4 4.0	0.147 3.4 4.3	0.165 3.7 4.6
375		36	m³/s side throw m	3.7 0.055 0.083 2.1 3.1 2.7 3.7 3.7 5.2	4.3 0.074 0.111 2.4 3.7 3.1 4.3 4.3 6.1	4.9 0.092 0.138 2.7 4.3 3.4 4.9 4.9 7.0	5.2 0.110 0.166 3.1 4.6 3.7 5.2 5.2 7.6	5.5 0.129 0.193 3.3 4.9 4.0 5.5 5.5 7.9	6.1 0.147 0.221 3.4 5.2 4.3 6.1 6.1 8.5	6.4 0.165 0.249 3.7 5.5 4.6 6.4 6.4 9.2
		B 34 *	m³/s side throw m	0.077 0.072 2.7 2.7 3.4 3.4	0.103 0.096 3.1 3.1 4.0 4.0	0.129 0.119 3.4 3.4 4.6 4.6	0.154 0.144 3.7 3.7 4.9 4.9	0.180 0.158 4.0 4.0 5.2 5.2	0.206 0.191 4.3 4.3 5.5 5.5	0.232 0.215 4.6 4.6 6.1 6.1
AD 0.141 m ²	21	▼B ► 51	m³/s side throw m	4.9 4.9 0.111 3.7 4.6	5.5 5.5 0.147 4.3 5.2	6.4 6.4 0.184 4.9 5.8	6.7 6.7 0.221 5.2 6.4	7.3 7.3 0.258 5.5 6.7	7.6 7.6 0.295 6.1 7.3	8.2 8.2 0.330 6.4 7.9
	•	11	m³/s side throw m	6.4 0.220 4.6 5.5 7.9	7.3 0.295 5.2 6.4 9.2	8.2 0.368 5.8 7.3 10.4	9.2 0.441 6.4 7.9 11.3	9.8 0.515 6.7 8.5 12.2	10.4 0.590 7.3 9.2 12.8	11.0 0.661 7.9 9.8 13.7

All ceiling diffusers, seismic restraints are required, but not supplied. *These cores are constructed to give as near as possible equal air flow in A & B directions.

Size		Patterns	Neck Vel m/s		2.10	2.62	3.15	3.67	4.19	4.72
in mm	Return	NC+7	TP Pa Total m³/s	6 0.319	11 0.425	18 0.531	25 0.637	35 0.734	45 0.850	57 0.956
	Factors	-SP=2.2TP	NC	9 A B	18 A B	25 A B	31 A B	35 A B	39 A B	43 A B
450 x 450		41	m³/s side throw m	0.079 2.4 3.1 4.3	0.106 2.7 3.4 4.9	0.132 3.1 4.0 5.5	0.159 3.4 4.3 6.1	0.188 3.7 4.6 6.4	0.212 4.0 4.9 7.0	0.238 4.3 5.2 7.3
		♣ 36	m³/s side throw m	0.079 0.119 2.4 3.4 3.1 4.3 4.3 5.8	0.106 0.159 2.7 4.0 3.4 4.9 4.9 6.7	0.132 0.199 3.1 4.6 4.0 5.5 5.5 7.6	0.159 0.239 3.4 4.9 4.3 6.1 6.1 8.2	0.186 0.279 3.7 5.2 4.6 6.4 6.4 8.8	0.212 0.319 4.0 5.5 4.9 7.0 7.0 9.5	0.239 0.359 4.3 6.1 5.2 7.3 7.3 10.1
AD		34 *	m³/s side throw m	0.106 0.106 3.4 3.4 4.3 4.3 5.8 5.8 0.159	0.142 0.142 4.0 4.0 4.9 4.9 6.7 6.7 0.212	0.177 0.177 4.6 4.6 5.5 5.5 7.6 7.6 0.265	0.212 0.212 4.9 4.9 6.1 6.1 8.3 8.3 0.318	0.248 0.248 5.2 5.2 6.4 6.4 8.8 8.8 0.371	0.283 0.283 5.5 5.5 7.0 7.0 9.5 9.5 0.425	0.319 0.319 6.1 6.1 7.3 7.3 10.1 10.1 0.477
AD 0.202 m²	21	51	m³/s side throw m	4.0 4.9 7.0	4.6 5.5 7.9	5.2 6.4 9.2 0.531	5.5 6.7 9.8 0.638	6.1 7.3 10.4	6.4 7.6 11.3	7.0 8.2 11.9
	D. d	□ 11	m³/s side throw m	4.9 6.1 8.5	5.8 7.0 9.8 0.578	6.7 7.9 11.3	7.0 8.5 11.9	7.6 9.2 12.8	8.2 10.1 13.7 1.157	8.8 10.7 14.6
	Return Factors	NC+9 -SP=2.7TP	Total m³/s NC	11 A B	20 A B	27 A B	33 A B	37 A B	41 A B	45 A B
525 x 525		41	m³/s side throw m	0.109 2.7 3.4 4.9	0.144 3.1 4.0 5.5	0.180 3.4 4.6 6.4	0.217 3.7 4.9 6.7	0.253 4.0 5.2 7.3	0.289 4.3 5.5 7.6	0.325 4.6 6.1 8.2
		♣ 36	m³/s side throw m	0.109 0.163 2.7 3.7 3.4 4.6 4.9 6.4	0.144 0.217 3.1 4.3 4.0 5.2 5.5 7.3	0.180 0.271 3.4 4.9 4.6 5.8 6.4 8.2	0.217 0.325 3.7 5.2 4.9 6.4 6.7 9.2	0.235 0.379 4.0 5.5 5.2 6.7 7.3 9.8	0.289 0.423 4.3 6.1 5.5 7.3 7.6 10.4	0.325 0.486 4.6 6.4 6.1 7.9 8.2 11.0
		34 *	m³/s side throw m	0.139	0.186 0.194 4.0 4.0 4.9 4.9 6.7 6.7	0.232 0.243 4.6 4.6 5.5 5.5 7.6 7.6 0.361	0.279 0.292 4.9 4.9 6.1 6.1 8.2 8.2	0.325	0.369 0.389 5.5 5.5 7.0 7.0 9.5 9.5 0.578	0.418
AD 0.276 m ²	21	51	m ³ /s side throw m m ³ /s side	0.216 4.6 5.5 7.9 0.432	0.289 5.2 6.4 9.2 0.578	5.8 7.3 10.4 0.723	0.433 6.4 7.9 11.3	0.505 6.7 8.5 12.2 1.010	7.3 9.2 12.8	7.9 9.8 13.7
		11	throw m	5.5 7.0	6.4 7.9	7.3 9.2	7.9 9.8	8.5 10.4	9.2 11.3	9.8 11.9
	D. d	NC 0	Total m ³ /a	9.5 0.566	11.0 0.755	12.5	13.4	14.6	15.6	16.5
	Return Factors	NC+9 -SP=2.83TP	Total m³/s NC	0.566 12	11.0 0.755 21 A B	0.944 28	1.130 34	14.6 1.320 38 A B	•	16.5 1.700 46
600 x 600				0.566	0.755 21	0.944 28	1.130 34	1.320 38	15.6 1.510 42	16.5 1.700 46
x		-SP=2.83TP	MC m³/s side throw m m³/s side throw m	0.566 12 A B 0.142 3.1 3.7 5.2 0.142 0.212 3.1 4.0 3.7 4.9 5.2 7.0	0.755 21 A B 0.189 3.7 4.3 6.1 0.189 0.280 3.7 4.6 4.3 5.5 6.1 7.9	0.944 28 A B 0.236 4.3 4.9 7.0 0.236 0.354 4.3 5.2 4.9 6.4 7.0 9.2	1.130 34 A B 0.283 4.6 5.2 7.6 0.283 0.425 4.6 5.5 5.5 5.2 6.7 7.6 9.8	1.320 38 A B 0.330 4.9 5.5 7.9 0.330 0.496 4.9 6.1 5.5 7.3 7.9 10.4	15.6 1.510 42 A B 0.378 5.2 6.1 8.5 0.378 0.567 5.2 6.4 6.1 7.6 8.5 11.3	16.5 1.700 46 A B 0.425 5.5 6.4 9.2 0.425 0.538 5.5 7.0 6.4 8.2 9.2 11.9
x 600		-SP=2.83TP -SP=2.83TP -SP=2.83TP	m³/s side throw m m³/s side throw m m³/s side throw m	0.566 12 A B 0.142 3.1 3.7 5.2 0.142 0.212 3.1 4.0 3.7 4.9 5.2 7.0 0.213 0.177 4.0 3.7 4.9 4.6 7.0 6.4	0.755 21 A B 0.189 3.7 4.3 6.1 0.189 0.280 3.7 4.6 4.3 5.5 6.1 7.9 0.283 0.236 4.6 4.3 5.5 5.5 5.2 7.9 7.3	0.944 28 A B 0.236 4.3 4.9 7.0 0.236 0.354 4.3 5.2 4.9 6.4 7.0 9.2 0.354 0.295 5.2 4.9 6.4 7.0 9.2 0.354 9.2 8.3 8.3 8.4 9.2 8.3 8.4 9.2 8.3 8.4 9.2 8.3 8.4 9.2 8.3 8.4 9.2 8.4 9.2 8.4 9.2 8.4 9.2 8.4 9.2 8.4 9.2 8.4 9.2 8.4 9.2 8.4 9.2 8.4 9.2 8.4 9.2 8.4 9.2 8.4 9.2 8.4 9.2 8.4 9.4 9.4 9.4 9.4 9.4 9.4 9.4 9	1.130 34 A B 0.283 4.6 5.2 7.6 0.283 0.425 4.6 5.5 5.2 6.7 7.6 9.8 0.425 0.354 5.5 5.2 6.7 6.4 9.8 9.2	1.320 38 A B 0.330 4.9 5.5 7.9 0.330 0.496 4.9 6.1 5.5 7.3 7.9 10.4 0.496 0.413 6.1 5.5 7.3 6.7 10.4 9.8	15.6 1.510 42 A B 0.378 5.2 6.1 8.5 0.378 0.567 5.2 6.4 6.1 7.6 8.5 11.3 0.567 0.472 6.4 6.1 7.6 7.3 11.3 10.4	16.5 1.700 46 A B 0.425 5.5 6.4 9.2 0.425 0.638 5.5 7.0 6.4 8.2 9.2 11.9 0.638 0.531 7.0 6.4 8.2 7.9 11.9 11.0
x		-SP=2.83TP 41 A 36	m ³ /s side throw m m ³ /s side throw m m ³ /s side throw m	0.566 12 A B 0.142 3.1 3.7 5.2 0.142 0.212 3.1 4.0 3.7 4.9 5.2 7.0 0.213 0.177 4.0 3.7 4.9 4.6	0.755 21 A B 0.189 3.7 4.3 6.1 0.189 0.280 3.7 4.6 4.3 5.5 6.1 7.9 0.283 0.236 4.6 4.3 5.5 5.2	0.944 28 A B 0.236 4.3 4.9 7.0 0.236 0.354 4.3 5.2 4.9 6.4 7.0 9.2 0.354 0.295 5.2 4.9 6.4 7.0 9.2 0.354 0.4 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5	1.130 34 A B 0.283 4.6 5.2 7.6 0.283 0.425 4.6 5.5 5.2 6.7 7.6 9.8 0.425 0.354 5.5 5.2 6.7 6.4	1.320 38 A B 0.330 4.9 5.5 7.9 0.330 0.496 4.9 6.1 5.5 7.3 7.9 10.4 0.496 0.413 6.1 5.5 7.3 6.7	15.6 1.510 42 A B 0.378 5.2 6.1 8.5 0.378 0.567 5.2 6.4 6.1 7.6 8.5 11.3 0.567 0.472 6.4 6.1 7.6 7.3	16.5 1.700 46 A B 0.425 5.5 6.4 9.2 0.425 0.638 5.5 7.0 6.4 8.2 9.2 11.9 0.638 0.531 7.0 6.4 8.2 7.9
X 600 AD 0.360	Factors 21	-SP=2.83TP 41 A 36 B A 34 * 51 11	m ³ /s side throw m m ³ /s side throw m m ³ /s side throw m m ³ /s side	0.566 12 A B 0.142 3.1 3.7 5.2 0.142 0.212 3.1 4.0 3.7 4.9 5.2 7.0 0.213 0.177 4.0 3.7 4.9 4.6 7.0 6.4 0.283 4.9 6.1 8.5	0.755 21 A B 0.189 3.7 4.3 6.1 0.189 0.280 3.7 4.6 4.3 5.5 6.1 7.9 0.283 0.236 4.6 4.3 5.5 5.2 7.9 7.3 0.378 5.8 7.0 9.8	0.944 28 A B 0.236 4.3 4.9 7.0 0.236 0.354 4.3 5.2 4.9 6.4 7.0 9.2 0.354 0.295 5.2 4.9 6.4 5.8 9.2 8.2 0.472 6.7 7.9 11.3	1.130 34 A B 0.283 4.6 5.2 7.6 0.283 0.425 4.6 5.5 5.2 6.7 7.6 9.8 0.425 0.354 5.5 5.2 6.7 6.4 9.8 9.2 0.566 7.0 8.5 11.9	1.320 38 A B 0.330 4.9 5.5 7.9 0.330 0.496 4.9 6.1 5.5 7.3 7.9 10.4 0.496 0.413 6.1 5.5 7.3 6.7 10.4 9.8 0.661 7.6 9.2 12.8	15.6 1.510 42 A B 0.378 5.2 6.1 8.5 0.378 0.567 5.2 6.4 6.1 7.6 8.5 11.3 0.567 0.472 6.4 6.1 7.6 7.6 7.6 7.8 11.3 10.4 0.755 8.2 10.1 13.7	16.5 1.700 46 A B 0.425 5.5 6.4 9.2 0.425 0.638 5.5 7.0 6.4 8.2 9.2 11.9 0.638 0.531 7.0 6.4 8.2 7.9 11.9 11.0 0.850 8.8 10.7 14.6
X 600 AD 0.360	Factors	-SP=2.83TP 41 A 36 B A 34 * 51	m ³ /s side throw m	0.566 12 A B 0.142 3.1 3.7 5.2 0.142 0.212 3.1 4.0 3.7 4.9 5.2 7.0 0.213 0.177 4.0 3.7 4.9 4.6 7.0 6.4 0.283 4.9 6.1 8.5 0.566 6.1 7.3 10.7 0.885 15 A B	0.755 21 A B 0.189 3.7 4.3 6.1 0.189 0.280 3.7 4.6 4.3 5.5 6.1 7.9 0.283 0.236 4.6 4.3 5.5 5.2 7.9 7.3 0.378 5.8 7.0 9.8 0.755 7.0 8.5 12.2 1.180 24 A B	0.944 28 A B 0.236 4.3 4.9 7.0 0.236 0.354 4.3 5.2 4.9 6.4 7.0 9.2 0.354 0.295 5.2 4.9 6.4 5.8 9.2 8.2 0.472 6.7 7.9 11.3 0.944 7.9 9.8 14.0 1.480 31 A B	1.130 34 A B 0.283 4.6 5.2 7.6 0.283 0.425 4.6 5.5 5.2 6.7 7.6 9.8 0.425 0.354 5.5 5.2 6.7 6.4 9.8 9.2 0.566 7.0 8.5 11.9 1.130 8.5 10.4 14.9 1.770 37 A B	1.320 38 A B 0.330 4.9 5.5 7.9 0.330 0.496 4.9 6.1 5.5 7.3 7.9 10.4 0.496 0.413 6.1 5.5 7.3 6.7 10.4 9.8 0.661 7.6 9.2 12.8 1.320 9.2 11.3 16.2 2.070 41 A B	15.6 1.510 42 A B 0.378 5.2 6.1 8.5 0.378 0.567 5.2 6.4 6.1 7.6 8.5 11.3 0.567 0.472 6.4 6.1 7.6 7.3 11.3 10.4 0.755 8.2 10.1 13.7 1.510 9.8 12.2 17.1 2.360 45 A B	16.5 1.700 46 A B 0.425 5.5 6.4 9.2 0.425 0.638 5.5 7.0 6.4 8.2 9.2 11.9 1.0638 0.531 7.0 6.4 8.2 7.9 11.9 11.0 0.850 8.8 10.7 14.6 1.700 10.7 12.8 18.3 2.660 49 A B
X 600 AD 0.360	Factors 21 Return	-SP=2.83TP 41 B A 36 B A 34 * B A 11 NC+9	m³/s side throw m Total m³/s NC m³/s side throw m	0.566 12 A B 0.142 3.1 3.7 5.2 0.142 0.212 3.1 4.0 3.7 4.9 5.2 7.0 0.213 0.177 4.0 3.7 4.9 4.6 7.0 6.4 0.283 4.9 6.1 8.5 0.566 6.1 7.3 10.7 0.885 15 A B 0.221 3.4 4.3 5.8	0.755 21 A B 0.189 3.7 4.3 6.1 0.189 0.280 3.7 4.6 4.3 5.5 6.1 7.9 0.283 0.236 4.6 4.3 5.5 5.2 7.9 7.3 0.378 5.8 7.0 9.8 0.755 7.0 8.5 12.2 1.180 24 A B 0.295 4.0 4.9 6.7	0.944 28 A B 0.236 4.3 4.9 7.0 0.236 0.354 4.3 5.2 4.9 6.4 7.0 9.2 0.354 0.295 5.2 4.9 6.4 5.8 9.2 8.2 0.472 6.7 7.9 11.3 0.944 7.9 9.8 14.0 1.480 31 A B 0.369 4.6 5.5 7.6	1.130 34 A B 0.283 4.6 5.2 7.6 0.283 0.425 4.6 5.5 5.2 6.7 7.6 9.8 0.425 0.354 5.5 5.2 6.7 6.4 9.8 9.2 0.566 7.0 8.5 11.30 8.5 10.4 14.9 1.770 37 A B 0.442 4.9 6.1 8.2	1.320 38 A B 0.330 4.9 5.5 7.9 0.330 0.496 4.9 6.1 5.5 7.3 7.9 10.4 0.496 0.413 6.1 5.5 7.3 6.7 10.4 9.8 0.661 7.6 9.2 11.3 16.2 2.070 41 A B 0.516 5.2 6.4 8.8	15.6 1.510 42 A B 0.378 5.2 6.1 8.5 0.378 0.567 5.2 6.4 6.1 7.6 8.5 11.3 0.567 0.472 6.4 6.1 7.6 7.3 11.3 10.4 0.755 8.2 10.1 13.7 1.510 9.8 12.2 17.1 2.360 45 A B 0.590 5.5 7.0 9.5	16.5 1.700 46 A B 0.425 5.5 6.4 9.2 0.425 0.638 5.5 7.0 6.4 8.2 9.2 11.9 0.638 0.531 7.0 6.4 8.2 7.9 11.9 11.0 0.850 8.8 10.7 14.6 1.700 10.7 12.8 18.3 2.660 49 A B 0.664 6.1 7.3 10.1
AD 0.360 m ²	Factors 21 Return	-SP=2.83TP 41 B A B A B A B A B A B A B A B A B A B	m³/s side throw m m³/s side throw m m³/s side throw m m³/s side throw m Total m³/s NC m³/s side throw m m³/s side throw m	0.566 12 A B 0.142 3.1 3.7 5.2 0.142 0.212 3.1 4.0 3.7 4.9 5.2 7.0 0.213 0.177 4.0 3.7 4.9 4.6 7.0 6.4 0.283 4.9 6.1 8.5 0.566 6.1 7.3 10.7 0.885 15 A B 0.221 3.4 4.3 5.8 0.221 0.332 3.4 4.6 4.3 5.8 7.9	0.755 21 A B 0.189 3.7 4.3 6.1 0.189 0.280 3.7 4.6 4.3 5.5 6.1 7.9 0.283 0.236 4.6 4.3 5.5 5.2 7.9 7.3 0.378 5.8 7.0 9.8 0.755 7.0 8.5 12.2 1.180 24 A B 0.295 4.0 4.9 6.7 0.295 0.443 4.0 5.2 4.9 6.7 0.295 0.444 4.0 5.2 4.9 6.7 9.2	0.944 28 A B 0.236 4.3 4.9 7.0 0.236 0.354 4.3 5.2 4.9 6.4 7.0 9.2 0.354 0.295 5.2 4.9 6.4 5.8 9.2 8.2 0.472 6.7 7.9 11.3 0.944 7.9 9.8 14.0 1.480 31 A B 0.369 4.6 5.5 7.6 0.369 0.553 4.6 5.8 7.6 10.4	1.130 34 A B 0.283 4.6 5.2 7.6 0.283 0.425 4.6 5.5 5.2 6.7 7.6 9.8 0.425 0.354 5.5 5.2 6.7 6.4 9.8 9.2 0.566 7.0 8.5 11.9 1.130 8.5 10.4 14.9 1.770 37 A B 0.442 4.9 6.1 8.2 0.442 0.663 4.9 6.4 6.1 7.9 8.2 11.3	1.320 38 A B 0.330 4.9 5.5 7.9 0.330 0.496 4.9 6.1 5.5 7.3 7.9 10.4 0.496 0.413 6.1 5.5 7.3 6.7 10.4 9.8 0.661 7.6 9.2 11.3 16.2 2.070 41 A B 0.516 5.2 6.4 8.8 0.516 0.774 5.2 6.4 8.8 0.516 0.774 5.2 6.4 8.8 0.516 0.774 5.2 6.4 8.8 0.516 0.774 5.2 6.4 8.8 0.516 0.774 5.2 6.4 8.8 0.516 0.774 5.2 6.4 8.8 0.516 0.774 5.2 6.4 8.8 0.516 0.774 5.2 6.4 8.8 0.516 0.774 5.2 6.4 8.8 0.516 0.774 5.2 6.4 8.8 0.516 0.774 5.2 6.4 8.8 0.516 0.774 5.2 6.4 8.8	15.6 1.510 42 A B 0.378 5.2 6.1 8.5 0.378 0.567 5.2 6.4 6.1 7.6 8.5 11.3 0.567 0.472 6.4 6.1 7.6 7.3 11.3 10.4 0.755 8.2 10.1 13.7 1.510 9.8 12.2 17.1 2.360 45 A B 0.590 5.5 7.0 9.5 0.590 0.885 5.5 7.3 7.0 9.2 9.5 12.8	16.5 1.700 46 A B 0.425 5.5 6.4 9.2 0.425 0.638 5.5 7.0 6.4 8.2 9.2 11.9 0.638 0.531 7.0 6.4 8.2 7.9 11.9 11.0 0.850 8.8 10.7 14.6 1.700 10.7 12.8 18.3 2.660 49 A B 0.664 6.1 7.3 10.1 0.664 0.996 6.1 7.9 1.3 9.8 10.1 13.7
AD 0.360 m²	Factors 21 Return	-SP=2.83TP 41 B A 36 B A 34 * * * * * * * * * * * * * * * * * *	m³/s side throw m m³/s side throw m m³/s side throw m m³/s side throw m Total m³/s NC m³/s side throw m m³/s side throw m	0.566 12 A B 0.142 3.1 3.7 5.2 0.142 0.212 3.1 4.0 3.7 4.9 5.2 7.0 0.213 0.177 4.0 3.7 4.9 4.6 7.0 6.4 0.283 4.9 6.1 8.5 0.566 6.1 7.3 10.7 0.885 15 A B 0.221 3.4 4.3 5.8 0.221 3.4 4.6 4.3 5.8 0.221 0.332 3.4 4.6 4.3 5.8 0.221 0.308 0.289 4.3 4.3 5.8 0.289 4.3 4.3 5.8 7.9 0.308 0.289 4.3 4.3 5.2 7.3 7.3	0.755 21 A B 0.189 3.7 4.3 6.1 0.189 0.280 3.7 4.6 4.3 5.5 6.1 7.9 0.283 0.236 4.6 4.3 5.5 5.2 7.9 7.3 0.378 5.8 7.0 9.8 0.755 7.0 8.5 12.2 1.180 24 A B 0.295 4.0 4.9 6.7 0.295 0.443 4.0 5.2 4.9 6.7 0.295 0.444 4.0 5.2 4.9 6.7 0.295 0.443 4.0 5.2 0.412 0.384 4.9 4.9 6.7 0.285 6.1 6.1 6.1 8.5 8.5	0.944 28 A B 0.236 4.3 4.9 7.0 0.236 0.354 4.3 5.2 4.9 6.4 7.0 9.2 0.354 0.295 5.2 4.9 6.4 5.8 9.2 8.2 0.472 6.7 7.9 11.3 0.944 7.9 9.8 14.0 1.480 31 A B 0.369 4.6 5.5 7.6 0.369 0.553 4.6 5.5 7.6 0.369 0.553 7.6 10.4 0.515 0.481 5.5 5.5 7.0 9.8 9.8	1.130 34 A B 0.283 4.6 5.2 7.6 0.283 0.425 4.6 5.5 5.2 6.7 6.6 9.8 0.425 0.354 5.5 5.2 6.7 6.4 9.8 9.2 0.566 7.0 8.5 11.9 1.130 8.5 10.4 14.9 1.770 37 A B 0.442 4.9 6.1 8.2 0.442 4.9 6.1 8.2 0.442 0.663 4.9 6.4 6.1 7.9 8.2 11.3 0.619 0.576 6.1 6.1 7.9 8.2 11.3	1.320 38 A B 0.330 4.9 5.5 7.9 0.330 0.496 4.9 6.1 5.5 7.3 7.9 10.4 0.496 0.413 6.1 5.5 7.3 6.7 10.4 9.8 0.661 7.6 9.2 11.3 16.2 2.070 41 A B 0.516 5.2 6.4 8.8 0.516 5.2 6.4 8.8 0.516 0.774 5.2 6.7 6.4 7.9 8.8 12.2 0.720 0.670 6.4 6.4 7.9 8.8 12.2 0.720 0.670 6.4 6.4 7.9 9.11.3 11.3	15.6 1.510 42 A B 0.378 5.2 6.1 8.5 0.378 0.567 5.2 6.4 6.1 7.6 8.5 11.3 0.567 0.472 6.4 6.1 7.6 7.6 7.6 7.0 11.3 10.4 0.755 8.2 10.1 13.7 1.510 9.8 12.2 17.1 2.360 45 A B 0.590 5.5 7.0 9.5 0.590 0.885 5.5 7.0 9.2 9.5 12.8 0.820 0.767 7.0 7.0 7.0 9.8 0.820 0.767 7.0 7.0 9.8 0.820 0.767 7.0 7.0 7.0 8.5 8.5 12.2 12.2	16.5 1.700 46 A B 0.425 5.5 6.4 9.2 0.425 0.638 5.5 7.0 6.4 8.2 9.2 11.9 0.638 0.531 7.0 6.4 8.2 7.9 11.9 11.0 0.850 8.8 10.7 14.6 1.700 10.7 12.8 18.3 2.660 49 A B 0.664 6.1 7.3 10.1 0.664 0.996 6.1 7.9 7.3 9.8 10.1 13.7 0.926 0.862 7.3 7.3 9.2 9.2 12.8 12.8
AD 0.360 m ²	Factors 21 Return	-SP=2.83TP 41 B A 36 B A 34 * B A 41 * B A A 41 * B A A A A B A B A B A B A B A B A B	m³/s side throw m m³/s side throw m m³/s side throw m m³/s side throw m Total m³/s NC m³/s side throw m m³/s side throw m	0.566 12 A B 0.142 3.1 3.7 5.2 0.142 0.212 3.1 4.0 3.7 4.9 5.2 7.0 0.213 0.177 4.0 3.7 4.9 4.6 7.0 6.4 0.283 4.9 6.1 8.5 0.566 6.1 7.3 10.7 0.885 15 A B 0.221 3.4 4.3 5.8 0.221 3.4 4.3 5.8 0.221 3.4 4.6 4.3 5.5 5.8 7.9 0.308 0.289 4.3 4.3 5.8 0.289 4.3 4.3 5.8 0.289 4.3 4.3 5.8 0.289 4.3 4.3 5.8 0.289 4.3 4.3 5.8 0.289 4.3 4.3 5.8 0.289 4.3 4.3 5.8 0.289 4.3 4.3 5.8 0.289 4.3 4.3 5.8 0.289 4.3 4.3 5.8 0.289 4.3 4.3 5.8 0.289 4.3 4.3 5.8 0.289 4.3 4.3 5.8 0.289 4.3 4.3 5.8 0.289 4.3 4.3 5.8 0.289 4.3 4.3 5.8 0.289 4.3 4.3 5.2 5.2	0.755 21 A B 0.189 3.7 4.3 6.1 0.189 0.280 3.7 4.6 4.3 5.5 6.1 7.9 0.283 0.236 4.6 4.3 5.5 5.2 7.9 7.3 0.378 5.8 7.0 8.5 12.2 1.180 24 A B 0.295 4.0 4.9 6.7 0.295 0.443 4.0 5.2 4.9 6.4 6.7 9.2 0.412 0.384 4.9 6.1 6.1	0.944 28 A B 0.236 4.3 4.9 7.0 0.236 0.354 4.3 5.2 4.9 6.4 7.0 9.2 0.354 0.295 5.2 4.9 6.4 5.8 9.2 8.2 0.472 6.7 7.9 11.3 0.944 7.9 9.8 14.0 1.480 31 A B 0.369 4.6 5.5 7.6 0.369 4.6 5.5 7.6 0.369 5.5 7.6 0.46 5.8 5.5 7.6 0.47 7.9 7.9 7.9 8.8 14.0 1.480 31 A B 0.369 4.6 5.5 7.6 0.369 4.6 5.5 7.6 0.369 0.553 7.6 0.481 5.5 5.5 7.0 7.0	1.130 34 A B 0.283 4.6 5.2 7.6 0.283 0.425 4.6 5.5 5.2 6.7 7.6 9.8 0.425 0.354 5.5 5.2 6.7 6.4 9.8 9.2 0.566 7.0 8.5 11.9 1.130 8.5 10.4 14.9 1.770 37 A B 0.442 4.9 6.1 8.2 0.442 0.663 4.9 6.4 6.1 7.9 8.2 11.3 0.619 0.576 6.1 6.1 7.6 7.6	1.320 38 A B 0.330 4.9 5.5 7.9 0.330 0.496 4.9 6.1 5.5 7.3 6.7 10.4 0.496 0.413 6.1 5.5 7.3 6.7 10.4 9.8 0.661 7.6 9.2 12.8 1.320 9.2 11.3 16.2 2.070 41 A B 0.516 5.2 6.4 8.8 0.516 0.774 5.2 6.4 8.8 0.516 0.772 0.670 6.4 6.4 7.9 7.9	15.6 1.510 42 A B 0.378 5.2 6.1 8.5 0.378 0.567 5.2 6.4 6.1 7.6 8.5 11.3 0.567 0.472 6.4 6.1 7.6 7.3 11.3 10.4 0.755 8.2 10.1 13.7 1.510 9.8 12.2 17.1 2.360 45 A B 0.590 5.5 7.0 9.5 0.590 0.885 5.5 7.0 9.5 0.820 0.767 7.0 8.5 8.5	16.5 1.700 46 A B 0.425 5.5 6.4 9.2 0.425 0.638 5.5 7.0 6.4 8.2 9.2 11.9 0.638 0.531 7.0 6.4 8.2 7.9 11.9 11.0 0.850 8.8 10.7 14.6 1.700 10.7 12.8 18.3 2.660 49 A B 0.664 6.1 7.3 10.1 0.664 0.996 6.1 7.3 10.1 0.664 0.996 6.1 7.3 9.2 9.2 0.926 0.882 7.3 9.2 9.2

 $^{^{\}ast}$ These cores are constructed to give as near as possible equal air flow in A & B directions.

Size		Patterns	Neck Vel m/s	1.5	7	2.10	_	2.6	2	3.1	5	3.6	7 _	4.1	9 _	4.7	2
in mm		T according	TP Pa	6		11		18		25		35		45		57	
	Return	NC+11	Total m³/s	1.2	70	1.70	00	2.1	20	2.5	50	2.9	70	3.4	00	3.8	20
	Keturn	NC+11	NC	16		25		32		38		42		46		50	
	Factors	-SP=3.8TP	NG	A	В	A	В	A	В	A	В	A	В	A	В	A	В
		<u> </u>	m³/s side	0.319		0.425		0.531		0.637		0.743		0.850		0.956	
900		44	throw m	3.7		4.3		4.9		5.2		5.5		6.1		6.4	
X		◆ ■ ◆ 41		4.6		5.2		5.8		6.4		6.7		7.3		7.9	
900		<u> </u>		6.4		7.3		8.2		9.2	•	9.8		10.4		11.0	
			m³/s side	0.319	0.477	0.425	0.637	0.531	0.796	0.637	0.956	0.743	1.120	0.850	1.270	0.956	1.430
		36	throw m	3.7	4.9	4.3	5.0	4.9	6.7	5.2	7.0	5.5	7.6	6.1	8.2	6.4	8.8
		A 30		4.6	6.1	5.2	8.7	5.8	7.9	6.4	8.5	6.7	9.2	7.3	10.1	7.9	10.7
		B	37	6.4 0.425	8.5 0.425	7.3 0.566	9.8 0.566	8.2 0.708	11.3 0.708	9.2 0.850	11.9 0.850	9.8 0.991	12.8 0.991	10.4 1.130	13.7 1.130	11.0 1.270	14.6 1.270
			m³/s side throw m	0.425	4.9	5.8	5.8	6.7	6.7	7.0	7.0	7.6	7.6	8.2	8.2	8.8	8.8
		₹ 34 *	throw m	6.1	6.1	7.0	7.0	7.9	7.9	8.5	8.5	9.2	9.2	10.1	10.1	10.7	10.7
		¬B^		8.5	8.5	9.8	9.8	11.3	11.3	11.9	11.9	12.8	12.8	13.7	13.7	14.6	14.6
AD	A	_	m³/s side	0.637	• • • • • • • • • • • • • • • • • • • •	0.850		1.060	•••••	1.270	• • • • • • • • • • • • • • • • • • • •	1.490	•••••	1.700		1.910	
0.81	21	51	throw m	6.1		7.0		7.9		8.5		9.2		9.8		10.7	
m ²		31		7.3		8.5		9.8		10.4		11.3		12.2		12.8	
	•			10.7		12.2		14.0		14.9	•	16.2		17.1		18.3	
			m³/s side	1.270		1.700		2.120		2.550		2.970		3.400		3.820	
		11	throw m	7.6 9.2		8.8		10.1		11.0		11.6		12.5		13.4	
				13.1		10.7 15.3		12.2 17.4		13.1 18.6		14.0 20.1		14.9 21.7		16.2 22.9	
	D. d	NC 44	Total m³/s	2.2	7 0	3.02	20	3.7	90	4.5	30	5.29	an e	6.0	10	6.8	nn
	Return	NC+14	NC	19		28		35		41		45		49		53	
	Factors	-SP=4.5TP		A	В	A	В	A	В	Α	В	A	В	A	В	A	В
			m³/s side	0.566		0.755		0.944		1.130		1.320		1.510		1.700	
1200		44	throw m	4.6		5.2		5.8		6.4		6.7		7.3		7.9	
X		41		5.5		6.4		7.3		7.9		8.5		9.2		9.8	
1200		<u> </u>		7.9		9.2		10.4		11.3		12.2		12.8		13.7	
			m³/s side	0.566	0.850	0.755	1.130	0.944	1.420	1.130	1.700	1.320	1.980	1.510	2.270	1.700	2.550
		36	throw m	4.6 5.5	6.1 7.3	5.2 6.4	7.0 8.5	5.8 7.3	7.9 9.8	6.4 7.9	8.5 10.4	6.7 8.5	9.2 11.3	7.3 9.2	9.8 12.2	7.9 9.8	10.7 12.8
		A SS		5.5 7.9	7.3 10.7	92.0	12.2	10.4	14.0	11.3	14.9	6.5 12.2	16.2	9.2 12.8	17.1	9.6 13.7	18.3
		A R	m³/s side	0.779	0.743	1.040	0.991	1.300	1.240	1.560	1.440	1.820	1.740	2.080	1.980	2.340	2.230
		1	throw m	5.8	5.8	6.7	6.7	7.6	7.6	8.2	8.2	8.8	8.8	9.5	9.5	10.1	10.1
		34 *		7.3	7.3	8.2	8.2	9.5	9.5	10.1	10.1	11.0	11.0	11.6	11.6	12.5	12.5
		▼B		10.1	10.1	11.6	11.6	13.1	13.1	14.3	14.3	15.3	15.3	16.5	16.5	17.4	17.4
AD		A	m³/s side	1.130		1.510		1.890		2.270		2.640		3.020		3.400	
1.44	— 24	51	throw m	7.6		8.8		10.1		11.0		11.6		12.5		13.4	
		⊢ /Ⅲ ▶ 51		9.2		10.7		12.2		13.1		14.0		14.9		16.2	
m ²	21	51						47.4		40.0		20.4		247		22.0	
	21	21	2,	13.1		15.3		17.4		18.6		20.1		21.7		22.9	
	21	₹ 11111	m³/s side	13.1 2.270	•	15.3 3.020		3.780		4.530		5.290		6.040		6.800	
	21	51 11	m³/s side throw m	13.1		15.3		2		2							

 $^{^{\}ast}$ These cores are constructed to give as near as possible equal air flow in A & B directions.

Guide Product Weights											
Approximate Weight in Kg.											
Size	CMPA141	CMPA136	CMPA151	CMPA121							
150 x 150	0.60	0.65	0.54	0.53							
225 x 225	0.80	0.80	0.83	0.81							
300 x 300	1.20	1.32	1.18	1.14							
375 x 375	1.60	1.56	1.66	1.60							
450 x 450	2.00	1.91	2.14	2.10							

Guide Product Weights											
Approximate Weight in Kg.											
Size	CMPA111	CMPA241	CMP-S	CMPS141							
150 x 150	0.51	2.60	PANEL	1.00							
225 x 225	0.79	2.70	595 SO	1.50							
300 x 300	1.13	2.70	232.20	1.90							
375 x 375	1.56	2.70	2.00	2.98							
450 x 450	2.03	2.70	2.00	3.40							

Size	Patterns Patterns	Neck Vel m/s	2.01	2.10	2.62	3.15	3.67	4.19	4.72
in mm	Return NC+0	TP Pa Total m³/s	6 0.053	0.071	0.088	0.106	35 0.124	0.142	57 0.159
	Factors -SP=1.3 TP	NC	- A B		17 A B	23 A B	27 A B	31 A B	35 A B
150 x 225	A 43 A 43	m³/s side throw m	0.017 0.000 1.8 1.2 2.4 1.5 3.1 2.1	2.1 1.5 2.7 1.8 3.7 2.4	0.029 0.015 2.4 1.8 3.1 2.1 4.3 2.7	0.035 0.017 2.7 1.8 3.4 2.1 4.6 3.1	0.041 0.021 2.7 2.1 3.7 2.4 4.9 3.4	0.047 0.024 3.1 2.1 4.0 2.4 5.2 3.4	0.053 0.026 3.4 2.4 4.3 2.7 5.5 3.7
	B 31	m³/s side throw m	0.022 0.000 2.1 1.2 2.4 1.5 3.4 2.1	8 0.029 0.012 2.4 1.5 2.7 1.8 4.0 2.4	0.037 0.015 2.7 1.8 3.1 2.1 4.6 2.7	0.044 0.017 3.1 1.8 3.4 2.1 4.9 3.1	0.052 0.021 3.4 2.1 3.7 2.4 5.2 3.4	0.059 0.024 3.4 2.1 4.0 2.4 5.5 3.4	0.066 0.026 3.7 2.4 4.3 2.7 6.1 3.7
	A 33	m³/s side throw m	0.020 0.01 1.8 1.5 2.4 1.8 3.1 2.7	7 0.026 0.022 2.1 1.8 2.7 2.1 3.7 3.1	0.033 0.027 2.4 2.1 3.1 2.4 4.3 3.4	0.040 0.033 2.7 2.1 3.4 2.7 4.6 3.7	0.046 0.039 2.7 2.4 3.7 2.7 4.9 4.0	0.053 0.044 3.1 2.4 4.0 3.1 5.2 4.3	0.060 0.050 3.4 2.7 4.3 3.4 5.5 4.6
	B 37	m³/s side throw m	0.017 0.01 1.8 1.8 2.4 2.4 3.1 3.1	7 0.024 0.024 2.1 2.1 2.7 2.7 3.7 3.7	0.029 0.029 2.4 2.4 3.1 3.1 4.3 4.3	0.035 0.035 2.7 2.7 3.4 3.4 4.6 4.6	0.041 0.041 2.7 2.7 3.7 3.7 4.9 4.9	0.047 0.047 3.1 3.1 4.0 4.0 5.2 5.2	0.053 0.053 3.4 3.4 4.3 4.3 5.5 5.5
	A 22, 23	m³/s side throw m	0.026 2.4 3.1 4.0	0.035 2.7 3.4 4.6	0.044 3.1 4.0 5.2	0.053 3.4 4.3 5.5	0.062 3.7 4.6 6.1	0.071 4.0 4.9 6.4	0.079 4.3 5.2 7.0
AD 0.033 m ²	52 B 54 53	m³/s side throw m	0.035 0.01 2.4 1.8 3.1 2.4 4.3 3.0	7 0.047 0.024 2.7 2.1 3.4 2.7 4.9 3.6	0.059 0.029 3.1 2.4 4.0 3.1 5.5 4.3	0.071 0.035 3.4 2.7 4.3 3.4 6.1 4.6	0.083 0.044 3.7 2.7 4.6 3.7 6.4 4.9	0.094 0.047 4.0 3.1 4.9 4.0 7.0 5.2	0.106 0.053 4.3 3.4 5.2 4.3 7.3 5.5
	12, 13	m³/s side throw m	0.053 3.1 3.7 5.2	0.071 3.7 4.3 6.1	0.088 4.3 4.8 7.0	0.106 4.6 5.2 7.6	0.124 4.9 5.5 7.9	0.142 5.2 6.1 8.5	0.159 5.5 6.4 9.2
	Return NC+2 Factors -SP=1.7TP	Total m³/s NC	0.071 - A B	0.094 11	0.118 18 A B	0.142 24 A B	0.165 28 A B	0.189 32 A B	0.212 36 A B
150 x 300	42 43 A 43	m³/s side throw m	0.026 0.000 2.4 1.2 3.1 1.5 4.0 2.1		0.044 0.015 3.1 1.8 4.0 2.1 5.2 2.7	0.055 0.018 3.4 1.8 4.3 2.1 5.5 3.1	0.062 0.021 3.7 2.1 4.6 2.4 6.1 3.4	0.071 0.024 4.0 2.1 4.9 2.4 6.4 3.4	0.080 0.026 4.3 2.4 5.2 2.7 7.3 3.7
	B 45 *	m³/s side throw m	0.018 0.01 2.1 2.1 2.4 2.4 3.4 3.4	2.4 2.4 2.7 2.7 4.0 4.0	0.029 0.029 2.7 2.7 3.1 3.1 4.6 4.6	0.035 0.035 3.1 3.1 3.4 3.4 4.9 4.9	0.041 0.041 3.4 3.4 3.7 3.7 5.2 5.2	0.047 0.047 3.4 3.4 4.0 4.0 5.5 5.5	0.053 0.053 3.7 3.7 4.3 4.3 6.1 6.1
	31	m³/s side throw m	0.031 0.000 2.4 1.2 3.1 1.5 4.3 2.1	2.7 1.5 3.4 1.8 4.9 2.4	0.052 0.015 3.1 1.8 4.0 2.1 5.5 2.7	0.062 0.018 3.4 1.8 4.3 2.1 6.1 3.1	0.072 0.020 3.7 2.1 4.6 2.4 6.4 3.4	0.083 0.024 4.0 2.1 4.9 2.4 7.0 3.4	0.093 0.026 4.6 2.4 5.5 2.7 7.9 3.7
	33	m³/s side throw m	0.035 0.01 1.8 1.8 2.4 2.4 3.1 3.1	2.1 2.1 2.7 2.7 3.7 3.7	0.060 0.029 2.4 2.4 3.1 3.1 4.3 4.3	0.071 0.035 2.7 2.7 3.4 3.4 4.6 4.6	0.083 0.041 2.7 2.7 3.7 3.7 4.9 4.9	0.094 0.047 3.1 3.1 4.0 4.0 5.2 5.2	0.107 0.053 3.4 3.4 4.3 4.3 5.5 5.5
	B 37	m³/s side throw m	0.026 0.02 2.4 2.1 3.1 2.7 4.0 3.7	2.7 2.4 3.4 3.1 4.6 4.3	0.044 0.037 3.1 2.7 4.0 3.4 5.2 4.9	0.053 0.044 3.4 3.1 4.3 3.7 5.5 5.2	0.062 0.052 3.7 3.4 4.6 4.0 6.1 5.5	0.071 A59 4.0 3.4 4.9 4.3 6.4 6.1	0.080 0.066 4.3 3.7 5.2 4.6 7.0 6.4
	A 22, 23	m³/s side throw m	0.035 2.4 3.1 4.3	0.047 2.7 3.4 4.9	0.059 3.1 4.0 5.5	0.071 3.4 4.3 6.1	0.083 3.7 4.6 6.4	0.094 4.0 4.9 7.0	0.106 4.3 5.2 7.3
0.045 m ²	52 54 55 53	m³/s side throw m	0.053 0.019 3.1 1.8 3.7 2.4 5.2 3.1	3.7 2.1 4.3 2.7 6.1 3.7	0.089 0.029 4.3 2.4 4.9 3.1 7.0 4.3	0.106 0.035 4.6 2.7 5.2 3.4 7.6 4.6	0.124 0.041 4.9 2.7 5.5 3.7 7.9 4.9	0.142 0.047 5.2 3.1 6.1 4.0 8.5 5.2	0.160 0.053 5.5 3.4 6.4 4.3 9.2 5.5
	12, 13	m³/s side throw m	0.071 3.1 3.7 5.2	0.094 3.7 4.3 6.1	0.118 4.3 4.9 7.0	0.142 4.6 5.2 7.6	0.165 4.9 5.5 7.9	0.189 5.2 6.1 8.5	0.212 5.5 6.4 9.2
	Return NC+2 Factors -SP=2.0TP	Total m³/s NC	0.089 - A B		0.147 19 A B	0.177 25 A B	0.207 29 A B	0.236 33 A B	0.266 37 A B
150 x 375	42 43 A 43	m³/s side throw m	0.035 0.000 2.4 1.2 3.1 1.5 4.3 2.1	2.7 1.5 3.4 1.8 4.9 2.4	0.059 0.015 3.1 1.8 4.0 2.1 5.5 2.7	0.071 0.018 3.4 1.8 4.3 2.1 6.1 3.1	0.083 0.021 3.7 2.1 4.6 2.4 6.4 3.4	0.094 0.024 4.0 2.1 4.9 2.4 7.0 3.4	0.106
	45 *	m³/s side throw m	0.018 0.02 2.1 2.4 2.4 3.1 3.4 4.0	2.4 2.7 2.7 3.4 4.0 4.6	0.029 0.044 2.7 3.1 3.1 4.0 4.6 5.2	0.035 0.053 3.1 3.4 3.4 4.3 4.9 5.5	0.041 0.062 3.4 3.7 3.7 4.6 5.2 6.1	0.047 0.071 3.4 4.0 4.0 4.9 5.5 6.4	0.053
	31	m³/s side throw m	0.040 0.000 2.7 1.2 3.1 1.5 4.6 2.1	3.1 1.5 3.7 1.8 5.2 2.4	0.066 0.015 3.4 1.8 4.3 2.1 5.8 2.7	0.080 0.018 3.7 1.8 4.6 2.1 6.4 3.1	0.093 0.021 4.0 2.1 4.9 2.4 6.7 3.4	0.106 0.024 4.3 2.1 5.2 2.4 7.3 3.4	0.119
	A 33	m³/s side throw m	0.053 0.013 2.7 1.8 3.1 2.4 4.6 3.1	3.1 2.1 3.7 2.7 5.2 3.7	0.089 0.029 3.4 2.4 4.3 3.1 5.8 4.3	0.106 0.035 3.7 2.7 4.6 3.4 6.4 4.6	0.125 0.041 4.0 2.7 4.9 3.7 6.7 4.9	0.142 0.047 4.3 3.1 5.2 4.0 7.3 5.2	0.160 0.053 4.6 3.4 5.5 4.3 7.9 5.5
	B 37	m³/s side throw m	0.026 0.03 2.4 2.4 3.1 3.1 4.0 4.3	2.7 2.7 3.4 3.4 4.6 4.9	0.044 0.052 3.1 3.1 4.0 4.0 5.2 5.5	0.055 0.062 3.4 3.4 4.3 4.3 5.5 6.1	0.062 0.072 3.7 3.7 4.6 4.6 6.1 6.4	0.071 0.083 4.0 4.0 4.9 4.9 6.4 7.0	0.080 0.093 4.3 4.3 5.2 5.2 7.0 7.3
AB	^A 22, 23	m³/s side throw m	0.044 2.7 3.4 4.9	0.059 3.1 4.0 5.5	0.074 3.4 4.6 6.4	0.088 3.7 4.9 6.7	0.103 4.0 5.2 7.3	0.118 4.3 5.5 7.6	0.133 4.6 6.1 8.2
AD 0.056 m ²	52 54 55 55 54	m³/s side throw m	0.071 0.019 3.1 1.8 3.7 2.4 5.2 3.1	3.7 2.1 4.3 2.7 6.1 3.7	0.118 0.029 4.3 2.4 4.9 3.1 7.0 4.3	0.142 0.035 4.6 2.7 5.2 3.4 7.6 4.6	0.165 0.041 4.9 2.7 5.5 3.7 7.9 4.9	0.189 0.047 5.2 3.1 6.1 4.0 8.5 5.2	0.212 0.053 5.5 3.4 6.4 4.3 9.2 5.5
	12, 13	m³/s side throw m	0.089 3.4 4.3 5.8	0.118 4.0 4.9 6.7	0.147 4.6 5.5 7.6	0.177 4.9 6.1 8.2	0.207 5.2 6.4 8.8	0.236 5.5 7.0 9.5	0.266 6.1 7.3 10.1

 $^{^{\}ast}$ These cores are constructed to give as near as possible equal air flow in A & B directions.

Size	Patterns	Neck Vel m/s	1.57	2.10	2.62	3.15	3.67	4.19	4.72
in mm	Return NC+3	TP Pa Total m³/s	6 0.106	11 0.142	18 0.177	25 0.212	35 0.248	45 0.283	57 0.319
	Factors -SP=2.8 TP	NC	- А В	13 A B	20 A B	26 A B	30 A B	34 A B	38 A B
150 x 450	43 A3	m³/s side throw m	0.044 0.009 2.7 1.2 3.4 1.5 4.9 2.1	3.1 1.5 4 1.8 5.5 2.4	0.074 0.015 3.4 1.8 4.6 2.1 6.4 2.7	0.089 0.018 3.7 1.8 4.9 2.1 6.7 3.1	0.103 0.021 4 2.1 5.2 2.4 7.3 3.4	0.118 0.024 4.3 2.1 5.5 2.4 7.6 3.4	0.133 0.026 4.6 2.4 6.1 2.7 8.2 3.7
	B 45 *	m³/s side throw m	0.026 0.020 2.4 2.4 3.1 3.1 4.0 4.0	2.7 2.7 3.4 3.4 4.6 4.6	0.044 0.044 3.1 3.1 4.0 4.0 5.2 5.2	0.053 0.053 3.4 3.4 4.3 4.3 5.5 5.5	0.062 0.062 3.7 3.7 4.6 4.6 6.1 6.1	0.071 0.071 4.0 4.0 4.9 4.9 6.4 6.4	0.080 0.080 4.3 4.3 5.2 5.2 7.0 7.0
	31	m³/s side throw m m³/s side	0.049 0.009 2.7 1.2 3.4 1.5 4.9 2.1 0.071 0.018	3.1 1.5 4.0 1.8 5.5 2.4	0.081 0.015 3.4 1.8 4.6 2.1 6.4 2.7 0.119 0.029	0.097 0.018 3.7 1.8 4.9 2.1 6.7 3.1 0.142 0.035	0.113 0.021 4.0 2.1 5.2 2.4 7.3 3.4 0.166 0.041	0.130 0.024 4.3 2.1 5.5 2.4 7.6 3.4 0.189 0.047	0.146 0.026 4.6 2.4 6.1 2.7 8.2 3.7 0.213 0.053
	33	throw m	3.1 1.8 3.7 2.4 5.2 3.1 0.035 0.03	3.7 2.1 4.3 2.7 6.1 3.7	4.3 2.4 4.9 3.1 7.0 4.3 0.059 0.059	4.6 2.7 5.2 3.4 7.6 4.6 0.071 0.071	4.9 2.7 5.5 3.7 7.9 4.9 0.083 0.083	5.2 3.1 6.1 4.0 8.5 5.2 0.094 0.094	5.5 3.4 6.4 4.3 9.2 5.5 0.106 0.106
	B 37	throw m m³/s side	2.4 2.4 3.1 3.1 4.3 4.3 0.053	2.7 2.7 3.4 3.4 4.9 4.9 0.071	3.1 3.1 4.0 4.0 5.5 5.5 0.088	3.4 3.4 4.3 4.3 6.1 6.1 0.106	3.7 3.7 4.6 4.6 6.4 6.4 0.124	4.0 4.0 4.9 4.9 7.0 7.0 0.142	4.3 4.3 5.2 5.2 7.3 7.3 0.159
AD	^A 22, 23	throw m m³/s side	3.1 3.7 5.2 0.088 0.018		4.3 4.9 7.0 0.148 0.029	4.6 5.2 7.6 0.177 0.035	4.9 5.5 7.9 0.207 0.041	5.2 6.1 8.5 0.236 0.047	5.5 6.4 9.2 0.266 0.053
0.068 m ²	52 55 55 53	throw m m³/s side	3.4 1.8 4.3 2.4 5.8 3.1 0.106	4.0 2.1 4.9 2.7 6.7 3.7 0.142	4.6 2.4 5.5 3.1 7.6 4.3 0.177	4.9 2.7 6.1 3.4 8.2 4.6 0.212	5.2 2.7 6.4 3.7 8.8 4.9 0.248	5.5 3.1 7.0 4.0 9.5 5.2 0.283	6.1 3.4 7.3 4.3 10.1 5.5 0.319
	Return NC+4	throw m Total m³/s	3.7 4.6 6.4 0.124	4.3 5.2 7.3 0.165	4.9 5.8 8.2 0.206	5.2 6.4 9.2 0.248	5.5 6.7 9.8 0.289	6.1 7.3 10.4 0.330	6.4 7.9 11.0 0.372
	Factors -SP=3.4TP	NC m³/s side	- A B 0.053 0.009		A B 0.088 0.015	A B 0.106 0.018	A B 0.124 0.021	A B 0.142 0.024	A B 0.159 0.026
150 x 525	42	throw m m³/s side	3.1 1.2 3.7 1.5 5.2 2.1 0.026 0.03		4.3 1.8 4.9 2.1 7.0 2.7 0.044 0.059	4.6 1.8 5.2 2.1 7.6 3.1 0.053 0.071	4.9 2.1 5.5 2.4 7.9 3.4 0.062 0.083	5.2 2.1 6.1 2.4 8.5 3.4 0.071 0.094	5.5 2.4 6.4 2.7 9.2 3.7 0.080 0.106
	45 *	throw m	2.4 2.4 3.1 3.1 4.0 4.3 0.058 0.009 3.1 1.2	2.7 2.7 3.4 3.4 4.6 4.9 3 0.077 0.012 3.7 1.5	3.1 3.1 4.0 4.0 5.2 5.5 0.096 0.015 4.3 1.8	3.4 3.4 4.3 4.3 5.5 6.1 0.115 0.018 4.6 1.8	3.7 3.7 4.6 4.6 6.1 6.4 0.134 0.021 4.9 2.1	4.0 4.0 4.9 4.9 6.4 7.0 0.153 0.024 5.2 2.1	4.3 4.3 5.2 5.2 7.0 7.3 0.172 0.026 5.5 2.4
	31	throw m m ³ /s side throw m	3.7 1.5 5.2 2.1 0.088 0.018 3.4 1.8	4.3 1.8 6.1 2.4	4.5 1.6 4.9 2.1 7.0 2.7 0.148 0.029 4.6 2.4	5.2 2.1 7.6 3.1 0.177 0.035 4.9 2.7	5.5 2.4 7.9 3.4 0.207 0.041 5.2 2.7	6.1 2.4 8.5 3.4 0.236 0.047 5.5 3.1	6.4 2.7 9.2 3.7 0.266 0.053 6.1 3.4
	33 B	m³/s side throw m	4.3 2.4 5.8 3.1 0.044 0.041 2.7 2.7	4.9 2.7 6.7 3.7	5.5 3.1 7.6 4.3 0.074 0.066 3.4 3.4	6.1 3.4 8.2 4.6 0.088 0.079 3.7 3.7	6.4 3.7 8.8 4.9 0.103 0.093 4.0 4.0	7.0 4.0 9.5 5.2 0.118 0.106 4.3 4.3	7.3 4.3 10.1 5.5 0.133 0.119 4.6 4.6
	A	m³/s side throw m	3.4 3.1 4.9 4.6 0.062 3.1	4.0 3.7 5.5 5.2 0.083 3.7	4.6 4.3 6.4 5.8 0.103 4.3	4.9 4.6 6.7 6.4 0.124 4.6	5.2 4.9 7.3 6.7 0.144 4.9	5.5 5.2 7.6 7.3 0.165 5.2	6.1 5.5 8.2 7.9 0.186 5.5
AD 0.079	^A 22, 23	m³/s side throw m	3.7 5.2 0.106 0.018 3.7 1.8	4.3 2.1	4.9 7.0 0.177 0.029 4.9 2.4	5.2 7.6 0.212 0.035 5.2 2.7	5.5 7.9 0.248 0.041 5.5 2.7	6.1 8.5 0.283 0.047 6.1 3.1	6.4 9.2 0.319 0.053 6.4 3.4
m²	55 53	m³/s side throw m	4.6 2.4 6.4 3.1 0.124 3.7	5.2 2.7 7.3 3.7 0.165 4.3	5.8 3.1 8.2 4.3 0.206 4.9	6.4 3.4 9.2 4.6 0.248 5.2	6.7 3.7 9.8 4.9 0.289 5.5	7.3 4.0 10.1 5.2 0.330 6.1	7.9 4.3 11.0 5.5 0.372 6.4
	Return NC+5	Total m³/s	4.6 6.4 0.142	5.2 7.3 0.189	5.8 8.2 0.236	6.4 9.2 0.283	6.7 9.8 0.330	7.3 10.4 0.378	7.9 11.0 0.425
150	Factors -SP=4.1TP	NC m³/s side throw m	A B 0.062 0.009 3.1 1.2	3.7 1.5	21 A B 0.103 0.015 4.3 1.8	27 A B 0.124 0.018 4.6 1.8	31 A B 0.144 0.021 4.9 2.1	35 A B 0.165 0.024 5.2 2.1	39 A B 0.186 0.026 5.5 2.4 6.4 2.7
600 x	45 *	m³/s side throw m	3.7 1.5 5.2 2.1 0.035 0.039 2.4 2.4 3.1 3.1	4.3 1.8 6.1 2.4 5 0.047 0.047 2.7 2.7 3.4 3.4	4.9 2.1 7.0 2.7 0.059 0.059 3.1 3.1 4.0 4.0	5.2 2.1 7.6 3.1 0.071 0.071 3.4 3.4 4.3 4.3	5.5 2.4 7.9 3.4 0.083 0.083 3.7 3.7 4.6 4.6	6.1 2.4 8.5 3.4 0.094 0.094 4.0 4.0 4.9 4.9	6.4 2.7 9.2 3.7 0.106 0.106 4.3 4.3 5.2 5.2
	31	m³/s side throw m	4.3 4.3 0.067 0.009 3.1 1.2 3.7 1.5	4.9 4.9 0 0.088 0.012 3.7 1.5 4.3 1.8	5.5 5.5 0.111 0.015 4.3 1.8 4.9 2.1	6.1 6.1 0.133 0.018 4.6 1.8 5.2 2.1	6.4 6.4 0.155 0.021 4.9 2.1 5.5 2.4	7.0 7.0 0.177 0.024 5.2 2.1 6.1 2.4	7.3 7.3 0.199 0.026 5.5 2.4 6.4 2.7
	A 33	m³/s side throw m	5.2 2.1 0.106 0.018 3.7 1.8 4.6 2.4 6.4 3.1	6.1 2.4 3 0.142 0.024 4.3 2.1 5.2 2.7 7.3 3.7	7.0 2.7 0.178 0.029 4.9 2.4 5.8 3.1 8.2 4.3	7.6 3.1 0.213 0.035 5.2 2.7 6.4 3.4 9.2 4.6	7.9 3.4 0.248 0.041 5.5 2.7 6.7 3.7 9.8 4.9	8.5 3.4 0.283 0.047 6.1 3.1 7.3 4.0 10.4 5.2	9.2 3.7 0.319 0.053 6.4 3.4 7.9 4.3 11.0 5.5
	B 37	m³/s side throw m	0.044 0.049 2.7 2.7 3.4 3.4 4.9 4.9		8.2 4.3 0.074 0.081 3.4 3.4 4.6 4.6 6.4 6.4	9.2 4.6 0.089 0.097 3.7 3.7 4.9 4.9 6.7 6.7	9.8 4.9 0.103 0.114 4.0 4.0 5.2 5.2 7.3 7.3	10.4 5.2 0.118 0.130 4.3 4.3 5.5 5.5 7.6 7.6	0.133
	A 22, 23	m³/s side throw m	0.071 3.1 3.7 5.2	0.094 3.7 4.3 6.1	0.118 4.3 4.9 7.0	0.142 4.6 5.2 7.6	0.165 4.9 5.5 7.9	0.189 5.2 6.1 8.5	0.212 5.5 6.4 9.2
AD 0.090 m ²	52 55 54 54 53	m³/s side throw m	0.123 0.018 3.7 1.8 4.6 2.4 6.4 3.1	3 0.165 0.024 4.3 2.1 5.2 2.7 7.3 3.7	0.207 0.029 4.9 2.4 5.8 3.1 8.2 4.3	0.248 0.035 5.2 2.7 6.4 3.4 9.2 4.6	0.289 0.041 5.5 2.7 6.7 3.7 9.8 4.9	0.330 0.047 6.1 3.1 7.3 4.0 10.4 5.2	0.372 0.053 6.4 3.4 7.9 4.3 11.0 5.5
	12, 13	m³/s side throw m	0.142 4.0 4.9 7.0	0.189 4.6 5.5 7.9	0.236 5.2 6.4 9.2	0.283 5.5 6.7 9.8	0.330 6.1 7.3 10.4	0.378 6.4 7.6 11.3	0.425 7.0 8.2 11.9
			1.0	1.9	J.L	3.0	10.7		

	Neck Vel m/s TP Pa	1.57 6	2.10 11	2.62 18	3.15 25	3.67 35	4.19 45	4.72 57
Return NC+5	Total m ³ /s	0.106	0.142 13	0.177 20	0.212 26	0.248 30	0.283 34	0.319 38
Factors -SP=4.1 TP	m³/s side throw m	A B 0.033 0.020 2.1 1.5 2.7 1.8 3.7 2.7	A B 0.044 0.026 2.4 1.8 3.1 2.1 4.3 3.1	A B 0.055 0.033 2.7 2.1 3.4 2.4 4.9 3.4	A B 0.067 0.040 3.1 2.1 3.7 2.7 5.2 3.7	A B 0.077 0.046 3.4 2.4 4 2.7 5.5 4	A B 0.089 0.053 3.4 2.4 4.3 3.1 6.1 4.3	A B 0.100 0.060 3.7 2.7 4.6 3.4 6.4 4.6
A 31	m³/s side throw m	0.043 0.020 2.7 1.5 3.4 1.8 4.9 2.7	0.057 26.000 3.1 1.8 4.0 2.1 5.5 3.1	0.072 0.033 3.4 2.1 4.6 2.4 6.4 3.4	0.086 0.040 3.7 2.1 4.9 2.7 6.7 3.7	0.101 0.046 4.0 2.4 5.2 2.7 7.3 4.0	0.115 0.053 4.3 2.4 5.5 3.1 7.6 4.3	0.129 0.060 4.6 2.7 6.1 3.4 8.2 4.6 0.106 0.106
A B 33	throw m m³/s side	2.4 2.4 3.1 3.1 4.0 4.0 0.033 0.036	2.7 2.7 3.4 3.4 4.6 4.6 0.044 0.049	3.1 3.1 4.0 4.0 5.2 5.2 0.055 0.060	3.4 3.4 4.3 4.3 5.5 5.5 0.067 0.073	3.7 3.7 4.6 4.6 6.1 6.1 0.077 0.085	4.0 4.0 4.9 4.9 6.4 6.4 0.089 0.097	4.3 4.3 5.2 5.2 7.0 7.0 0.100 0.109 4.3 4.6
A	m³/s side throw m	3.1 3.1 4.3 4.6 0.053 3.1	3.4 3.7 4.9 5.2 0.071 3.7	4.0 4.3 5.5 5.8 0.089 4.3	4.3 4.6 6.1 6.4 0.106 4.6	4.6 4.9 6.4 6.7 0.124 4.9	4.9 5.2 7.0 7.3 0.142 5.2	5.2 5.5 7.3 7.9 0.159 5.5
A	m³/s side throw m	3.7 5.2 0.067 0.040 3.1 2.4 3.7 3.1	4.3 6.1 0.089 0.055 3.7 2.7 4.3 3.4	4.9 7.0 0.111 0.067 4.3 3.1 4.9 4.0	5.2 7.6 0.133 0.080 4.6 3.4 5.2 4.3	5.5 7.9 0.155 0.093 4.9 3.7 5.5 4.6	6.1 8.5 0.177 0.106 5.2 4.0 6.1 4.9	6.4 9.2 0.199 0.119 5.5 4.3 6.4 5.2
55 A 53	m³/s side throw m	5.2 4.0 0.106 3.7 4.6 6.4	6.1 4.6 0.142 4.3 5.2	7.0 5.2 0.177 4.9 5.8	7.6 5.5 0.212 5.2 6.4	7.9 6.1 0.243 5.5 6.7	8.5 6.4 0.283 6.1 7.3	9.2 7.0 0.319 6.4 7.9 11.0
Return NC+4 Factors -SP=1.8 TP	Total m³/s NC	0.133 - A B	0.177 14 A B	0.222 21 A B	0.266 27 A B	0.310 31 A B	0.354 35 A B	0.400 39 A B 0.140 0.060
42 B 43	throw m m³/s side	2.7 1.5 3.4 1.8 4.9 2.7 0.033 0.033	3.1 1.8 4.0 2.1 5.5 3.1 0.044 0.044	3.4 2.1 4.6 2.4 6.4 3.4 0.055 0.055	3.7 2.1 4.9 2.7 6.7 3.7 0.067 0.067	4.0 2.4 5.2 2.7 7.3 4.0 0.077 0.077	4.3 2.4 5.5 3.1 7.6 4.3 0.089 0.089	4.6 2.7 6.1 3.4 8.2 4.6 0.100 0.100
45 *	m³/s side throw m	3.1 3.1 4.3 4.3 0.057 0.020 3.1 1.5	3.4 3.4 4.9 4.9 0.075 0.026 3.7 1.8	4.0 4.0 5.5 5.5 0.094 0.033 4.3 2.1	4.3 4.3 6.1 6.1 0.113 0.040 4.6 2.1	4.6 4.6 6.4 6.4 0.132 0.046 4.9 2.4	4.9 4.9 7.0 7.0 0.151 0.053 5.2 2.4	4.3 4.3 5.2 5.2 7.3 7.3 0.169 0.060 5.5 2.7
B A	m³/s side throw m	3.7 1.8 5.2 2.7 0.039 0.055 2.7 2.1 3.1 2.7	4.3 2.1 6.1 3.1 0.052 0.073 3.1 2.4 3.7 3.1	4.9 2.4 7.0 3.4 0.065 0.093 3.4 2.7 4.3 3.4	5.2 2.7 7.6 3.7 0.078 0.110 3.7 3.1 4.6 3.7	5.5 2.7 7.9 4.0 0.091 0.128 4.0 3.4 4.9 4.0	6.1 3.1 8.5 4.3 0.103 0.147 4.3 3.4 5.2 4.3	6.4 3.4 9.2 4.6 0.117 0.166 4.6 3.7 5.5 4.6
B 37	m³/s side throw m	4.6 3.7 0.046 0.043 2.7 2.7 3.4 3.4	5.2 4.3 0.061 0.058 3.1 3.1 4.0 4.0	5.8 4.9 0.076 0.072 3.4 3.4 4.6 4.6	6.4 5.2 0.092 0.086 3.7 3.7 4.9 4.9	6.7 5.5 0.107 0.100 4.0 4.0 5.2 5.2	7.3 6.1 0.123 0.115 4.3 4.3 5.5 5.5	7.9 6.4 0.138 0.129 4.6 4.6 6.1 6.1 8.2 8.2
A 22, 23	m³/s side throw m	0.066 3.1 3.7 5.2	0.088 3.7 4.3 6.1	0.111 4.3 4.9 7.0	0.133 4.6 5.2 7.6	0.155 4.9 5.5 7.9	0.177 5.2 6.1 8.5	0.199 5.5 6.4 9.2
52 55 54 53	m³/s side throw m m³/s side	3.4 2.4 4.3 3.1 5.8 4.0 0.133	4.0 2.7 4.9 3.4 6.7 4.6 0.177	4.6 3.1 5.5 4.0 7.6 5.2 0.222	4.9 3.4 6.1 4.3 8.2 5.5 0.266	5.2 3.7 6.4 4.6 8.8 6.1 0.310	5.5 4.0 7.0 4.9 9.5 6.4 0.354	0.279 0.119 6.1 4.3 7.3 5.2 10.1 7.0 0.400
Return NC+4	throw m Total m³/s	4.0 4.9 7.0 0.159	4.6 5.5 7.9 0.212 15	5.2 6.4 9.2 0.265 22	5.5 6.7 9.8 0.319 28	6.1 7.3 10.4 0.372 32	6.4 7.6 11.3 0.425 36	7.0 8.2 11.9 0.478 40
Factors -SP=2.2 TP	m³/s side throw m	A B 0.060 0.020 3.1 1.5	A B 0.080 0.026 3.7 1.8	A B 0.100 0.033 4.3 2.1	A B 0.120 0.040 4.6 2.1	A B 0.140 0.046 4.9 2.4	A B 0.160 0.053 5.2 2.4	A B 0.179 0.060 5.5 2.7 6.4 3.4
B 42 A 45 *	m³/s side throw m	5.2 2.7 0.033 0.049 2.4 2.7 3.1 3.4	6.1 3.1 0.044 0.062 2.7 3.1 3.4 4.0	7.0 3.4 0.055 0.077 3.1 3.4 4.0 4.6	7.6 3.7 0.067 0.093 3.4 3.7 4.3 4.9	7.9 4.0 0.077 0.109 3.7 4.0 4.6 5.2	8.5 4.3 0.089 0.124 4.0 4.3 4.9 5.5	9.2 4.6 0.100 0.140 4.3 4.6 5.2 6.1
31	m³/s side throw m	0.069 0.020 3.1 1.5 3.7 1.8 5.2 2.7	0.093 0.026 3.7 1.8 4.3 2.1 6.1 3.1	0.116 0.033 4.3 2.1 4.9 2.4 7.0 3.4	0.139 0.040 4.6 2.1 5.2 2.7 7.6 3.7	0.163 0.046 4.9 2.4 5.5 2.7 7.9 4.0	0.186 0.053 5.2 2.4 6.1 3.1 8.5 4.3	7.3 8.2 0.209 0.060 5.5 2.7 6.4 3.4 9.2 4.6
33	m³/s side throw m m³/s side	0.079 0.040 2.4 2.4 3.1 3.1 4.3 4.0 0.046 0.056	0.106 0.053 2.7 2.7 3.4 3.4 4.9 4.6 0.061 0.075	0.133 0.067 3.1 3.1 4.0 4.0 5.5 5.2 0.077 0.094	0.159 0.080 3.4 3.4 4.3 4.3 6.1 5.5 0.092 0.113	0.186 0.093 3.7 3.7 4.6 4.6 6.4 6.1 0.107 0.131	0.212 0.106 4.0 4.0 4.9 4.9 7.0 6.4 0.123 0.150	0.239 0.119 4.3 4.3 5.2 5.2 7.3 7.0 0.138 0.169
▼ .	throw m m³/s side	2.7 3.1 3.4 3.7 4.9 5.2 0.077	3.1 3.7 4.0 4.3 5.5 6.1 0.106	3.4 4.3 4.6 4.9 6.4 7.0 0.133	3.7 4.6 4.9 5.2 6.7 7.6 0.159	4.0 4.9 5.2 5.5 7.3 7.9 0.186	4.3 5.2 5.5 6.1 7.6 8.5 0.212	4.6 5.5 6.1 6.4 8.2 9.2 0.239 6.1
	m³/s side throw m	4.3 5.8 0.119 0.040 3.7 2.4	4.9 6.7 0.160 0.053 4.3 2.7	5.5 7.6 0.199 0.067 4.9 3.1	6.1 8.2 0.239 0.080 5.2 3.4	6.4 8.8 0.279 0.093 5.5 3.7	7.0 9.5 0.319 0.106 6.1 4.0	7.3 10.1 0.358 0.119 6.4 4.3
55 23 53	m³/s side throw m	6.4 4.0 0.159 4.0 4.9	7.3 4.6 0.212 4.6 5.5	8.2 5.2 0.265 5.2 6.4	9.2 5.5 0.319 5.5 6.7	9.8 6.1 0.372 6.1 7.3	10.4 6.4 0.425 6.4 7.6	7.9 5.2 11.0 7.0 0.478 7.0 8.2 11.9
	Factors -SP=4.1 TP AA 43 B 31 AA 22, 23 B AA 52 B AA 54 52 B A 54 55 A 53 12, 13 Return NC+4 Factors -SP=1.8 TP AA 45 * B 31 A 22, 23 B AA 37 A 37 A 37 A 45 * B 31 A 37 A 45 * A 37 A 45 * B 31 B 33 B 34 B 34 A 37 A 37	Factors SP=4.1 TP A B 42 A B 31 B A 33 B A 37 A 22, 23 B A 52 A 53 Return NC+4 Factors -SP=1.8 TP A 45 * B 31 Return NC+4 Factors -SP=1.8 TP A 45 * B 31 Return NC+4 Factors -SP=1.8 TP A 45 * A 53 B A 52 B A 54 B 31 A 45 * A 53 B A 55 B A 54 B A 45 * A 55 B A 54 B A 45 * A 55 B A 54 B A 45 * A 55 B A 54 B A 45 * A 55 B A 54 B A 45 * A 55 B A 54 B A 45 * A 55 B A 54 B A 45 * B A 65 B A 7 A 7 B A	Sectors SP=4.1 TP	Pactors SP=4.1TP	Factors	Factors -SP-4.1TP	Factors	Factor Special TP

 $^{^{\}ast}$ These cores are constructed to give as near as possible equal air flow in A & B directions.

Size	Patterns	Neck Vel m/s	1.57	2.10	2.62	3.15	3.67	4.19	4.72
in mm	Return NC+5	TP Pa Total m³/s	6 0.186	11 0.247	18 0.309	25 0.371	35 0.433	45 0.496	57 0.557
	Factors -SP=2.6 TP	NC	- А В	15 A B	22 A B	28 A B	32 A B	36 A B	40 A B
225 x 525	A 43	m³/s side throw m	0.073 0.020 3.4 1.5 4.3 1.8 5.8 2.7	0.097 0.026 4 1.8 4.9 2.1 6.7 3.1	0.122 0.033 4.6 2.1 5.5 2.4 7.6 3.4	0.146 0.040 4.9 2.1 6.1 2.7 8.2 3.7	0.170 0.046 5.2 2.4 6.4 2.7 8.8 4	0.195 0.053 5.5 2.4 7.0 3.1 9.5 4.3	0.219 0.060 6.1 2.7 7.3 3.4 10.1 4.6
	45 *	m³/s side throw m	0.046 0.046 2.7 2.7 3.4 3.4 4.9 4.9	0.062 0.062 3.1 3.1 4.0 4.0 5.5 5.5	0.077 0.077 3.4 3.4 4.6 4.6 6.4 6.4	0.093 0.093 3.7 3.7 4.9 4.9 6.7 6.7	0.108 0.108 4.0 4.0 5.2 5.2 7.3 7.3	0.123 0.123 4.3 4.3 5.5 5.5 7.6 7.6	0.139 0.139 4.6 4.6 6.1 6.1 8.2 8.2
	A 31	m³/s side throw m	0.083 0.020 3.4 1.5 4.3 1.8 5.8 2.7	0.111 0.026 4.0 1.8 4.9 2.1 6.7 3.1	0.138 0.033 4.6 2.1 5.5 2.4 7.6 3.4	0.166 0.040 4.9 2.1 6.1 2.7 8.2 3.7	0.194 0.046 5.2 2.4 6.4 2.7 8.8 4.0	0.221 0.053 5.5 2.4 7.0 3.1 8.5 4.3	0.249 0.060 6.1 2.7 7.3 3.4 10.1 4.6
	A 33	m³/s side throw m	0.106 0.040 3.7 2.4 4.6 3.1 6.4 4.0	0.142 0.053 4.3 2.7 5.2 3.4 7.3 4.6	0.177 0.067 4.9 3.1 5.8 4.0 8.2 5.2	0.212 0.080 5.2 3.4 6.4 4.3 9.2 5.5	0.247 0.093 5.5 3.7 6.7 4.6 9.8 6.1	0.282 0.106 6.1 4.0 7.3 4.9 10.4 6.4	0.318 0.119 6.4 4.3 7.9 5.2 11.0 7.0
	B 37	m³/s side throw m	0.060 0.063 3.1 3.1 3.7 3.7 5.2 5.2	0.080 0.083 3.7 3.7 4.3 4.3 6.1 6.1	0.100 0.105 4.3 4.3 4.9 4.9 7.0 7.0	0.119 0.126 4.6 4.6 5.2 5.2 7.6 7.6	0.139 0.147 4.9 4.9 5.5 5.5 7.9 7.9	0.159 0.168 5.2 5.2 6.1 6.1 8.5 8.5	0.179 0.188 5.5 5.5 6.4 6.4 9.2 9.2
AD	^A 22, 23	m³/s side throw m	0.093 3.4 4.3 5.8	0.124 4.0 4.9 6.7	0.154 4.6 5.5 7.6	0.186 4.9 6.1 8.2	0.216 5.2 6.4 8.8	0.248 5.5 7.0 9.5	0.279 6.1 7.3 10.1
AD 0.118 m ²	52 55 55 54 53	m³/s side throw m	0.145 0.040 4.0 2.4 4.9 3.1 7.0 4.0 0.186	0.195 0.053 4.6 2.7 5.5 3.4 7.9 4.6 0.247	0.243 0.067 5.2 3.1 6.4 4.0 9.2 5.2 0.309	0.291 0.080 5.5 3.4 6.7 4.3 9.8 5.5 0.371	0.340 0.093 6.1 3.7 7.3 4.6 10.4 6.1 0.433	0.389 0.106 6.4 4.0 7.6 4.9 11.3 6.4 0.496	0.438 0.119 7.0 4.3 8.2 5.2 11.9 7.0 0.557
	12, 13	m³/s side throw m Total m³/s	4.3 5.2 7.3	4.9 6.1 8.5	5.5 7.0 9.8	0.371 6.1 7.6 10.4	0.433 6.4 7.9 11.3	7.0 8.5 12.2	7.3 9.2 12.8
	Return NC+5 Factors -SP=3.0 TP	NC	0.212 - A B	0.283 16 A B	23 A B	29 A B	33 A B	0.566 37 A B	0.637 41 A B
225 x 600	42 • B 43	m³/s side throw m	0.086 0.020 3.4 1.5 4.3 1.8 5.8 2.7	0.115 0.026 4.0 1.8 4.9 2.1 6.7 3.1	0.144 0.033 4.6 2.1 5.5 2.4 7.6 3.4	0.173 0.040 4.9 2.1 6.1 2.7 8.2 3.7	0.202 0.046 5.2 2.4 6.4 2.7 8.8 4.0	0.230 0.053 5.5 2.4 7.0 3.1 9.5 4.3	0.259 0.060 6.1 2.7 7.3 3.4 10.1 4.6
	45 *	m³/s side throw m m³/s side	0.047 0.060 2.7 3.1 3.4 3.7 4.9 5.2 0.096 0.020	0.062 0.080 3.1 3.7 4.0 4.3 5.5 6.1 0.128 0.026	0.077 0.100 3.4 4.3 4.6 4.9 6.4 7.0 0.161 0.033	0.093 0.119 3.7 4.6 4.9 5.2 6.7 7.6 0.193 0.040	0.109 0.139 4.0 4.9 5.2 5.5 7.3 7.9 0.225 0.046	0.124 0.159 4.3 5.2 5.5 6.1 7.6 8.5 0.257 0.053	0.140 0.179 4.6 5.5 6.1 6.4 8.2 9.2 0.286 0.060
	31	throw m	3.4 1.5 4.3 1.8 5.8 2.7 0.133 0.040	4.0 1.8 4.9 2.1 6.7 3.1 0.178 0.053	4.6 2.1 5.5 2.4 7.6 3.4 0.221 0.067	4.9 2.1 6.1 2.7 8.2 3.7 0.265 0.080	5.2 2.4 6.4 2.7 8.8 4.0 0.310 0.093	5.5 2.4 7.0 3.1 9.5 4.3 0.354 0.106	6.1 2.7 7.3 3.4 10.1 4.6 0.398 0.119
	33	throw m	4.0 2.4 4.9 3.1 7.0 4.0 0.073 0.069	4.6 2.7 5.5 3.4 7.9 4.6 0.097 0.093	5.2 3.1 6.4 4.0 9.2 5.2 0.122 0.116	5.5 3.4 6.7 4.3 9.8 5.5 0.146 0.139	6.1 3.7 7.3 4.6 10.4 6.1 0.170 0.162	6.4 4.0 7.6 4.9 11.3 6.4 0.195 0.186	7.0 4.3 8.2 5.2 11.9 7.0 0.220 0.209
	B 37	throw m	3.1 3.1 3.7 3.7 5.2 5.2 0.106	3.7 3.7 4.3 4.3 6.1 6.1 0.142	4.3 4.3 4.9 4.9 7.0 7.0 0.177	4.6 4.6 5.2 5.2 7.6 7.6 0.212	4.9 4.9 5.5 5.5 7.9 7.9 0.248	5.2 5.2 6.1 6.1 8.5 8.5 0.283	5.5 5.5 6.4 6.4 9.2 9.2 0.319
AD	A 22, 23	throw m m³/s side	3.7 4.6 6.4 0.172 0.040	4.3 5.2 7.3 0.230 0.053	4.9 5.8 8.2 0.288 0.067	5.2 6.4 9.2 0.345 0.080	5.5 6.7 9.8 0.403 0.093	6.1 7.3 10.4 0.460 0.106	6.4 7.9 11.0 0.518 0.119
0.135 m²	52 55 55 53	throw m m³/s side	4.3 2.4 5.2 3.1 7.3 4.0 0.212	4.9 2.7 6.1 3.4 8.5 4.6 0.283	5.5 3.1 7.0 4.0 9.8 5.2 0.354	6.1 3.4 7.6 4.3 10.4 5.5 0.425	6.4 3.7 7.9 4.6 11.3 6.1 0.406	7.0 4.0 8.5 4.9 12.2 6.4 0.566	7.3 4.3 9.2 5.2 12.8 7.0 0.637
	12, 13	throw m	4.3 5.2 7.3	4.9 6.1 8.5	5.5 7.0 9.8	6.1 7.6 10.4	6.4 7.9 11.3	7.0 8.5 12.2	7.3 9.2 12.8
	Return NC+3 Factors -SP=1.7 TP	Total m³/s NC	0.177 - A B	0.236 16 A B	0.295 23 A B	0.354 29 A B	0.413 33 A B	0.472 37 A B	0.531 41 A B
300 x 375	B 42	m³/s side throw m	0.053 0.035 2.4 1.8 3.4 2.4 4.3 3.1	0.071 0.047 2.7 2.1 3.4 2.7 4.9 3.7	0.088 0.059 3.1 2.4 4.0 3.1 5.5 4.3	0.106 0.071 3.4 2.7 4.3 3.4 6.1 4.6	0.124 0.083 3.7 2.7 4.6 3.7 6.4 4.9	0.142 0.094 4.0 3.1 4.9 4.0 7.0 5.2	0.159 0.106 4.3 3.4 5.2 4.3 7.3 5.5
	A 31	m³/s side throw m	0.071 0.035 3.1 1.8 3.7 2.4 5.2 3.1 0.061 0.055	0.094 0.047 3.7 2.1 4.3 2.7 6.1 3.7 0.081 0.074	0.118 0.059 4.3 2.4 4.9 3.1 7.0 4.3 0.102 0.092	0.142 0.071 4.6 2.7 5.2 3.4 7.6 4.6 0.122 0.111	0.165 0.083 4.9 2.7 5.5 3.7 7.9 4.9 0.142 0.129	0.189 0.094 5.2 3.1 6.1 4.0 8.5 5.2 0.162 0.147	0.212 0.106 5.5 3.4 6.4 4.3 9.2 5.5 0.183 0.166
	A 33	m ³ /s side throw m m ³ /s side	0.061 0.055 2.7 2.1 3.1 2.7 4.6 3.7 0.053 0.062	0.081 0.074 3.1 2.4 3.7 3.1 5.2 4.3 0.071 0.083	3.4 2.7 4.3 3.4 5.8 4.9 0.088 0.103	0.122 0.111 3.7 3.1 4.6 3.7 6.4 5.2 0.106 0.124	4.0 3.4 4.9 4.0 6.7 5.5 0.124 0.144	0.162 0.147 4.3 3.4 5.2 4.3 7.3 6.1 0.142 0.165	0.183 0.166 4.6 3.7 5.5 4.6 7.9 6.4 0.159 0.186
	B 37	throw m	3.1 3.1 3.7 3.7 5.2 5.2 0.088	3.7 3.7 4.3 4.3 6.1 6.1 0.118	4.3 4.3 4.9 4.9 7.0 7.0 0.147	4.6 4.6 5.2 5.2 7.6 7.6 0.177	4.9 4.9 5.5 5.5 7.9 7.9 0.207	5.2 5.2 6.1 6.1 8.5 8.5 0.236	5.5 5.5 6.4 6.4 9.2 9.2 0.266
AD	A 22, 23	throw m	3.4 4.3 5.8 0.106 0.071	4.0 4.9 6.7 0.142 0.094	4.6 5.5 7.6 0.177 0.118	4.9 6.1 8.2 0.212 0.142	5.2 6.4 8.8 0.248 0.165	5.5 7.0 9.5 0.283 0.189	6.1 7.3 10.1 0.319 0.212
AD 0.112 m ²	52 55 55 54 53	throw m m³/s side	3.7 2.7 4.6 3.4 6.4 4.9 0.177	4.3 3.1 5.2 4.0 7.3 5.5 0.236	4.9 3.4 5.8 4.6 8.2 6.4 0.295	5.2 3.7 6.4 4.9 9.2 6.7 0.354	5.5 4.0 6.7 5.2 9.8 7.3 0.413	6.1 4.3 7.3 5.5 10.4 7.6 0.472	6.4 4.6 7.9 6.1 11.0 8.2 0.531
	12, 13	throw m	4.3 5.2 7.3	4.9 6.1 8.5	5.5 7.0 9.8	6.1 7.6 10.4	6.4 7.9 11.3	7.0 8.5 12.2	7.3 9.2 12.8

 $^{^{\}ast}$ These cores are constructed to give as near as possible equal air flow in A & B directions.

Performance Data – CMP

Size	Patterns	Neck Vel m/s	1.57	2.10	2.62	3.15	3.67	4.19	4.72
in mm	Return NC+4	TP Pa Total m³/s	6 0.212	0.283	18 0.354	25 0.425	35 0.496	45 0.566	57 0.637
	Factors -SP=2.0 TP	NC	A B 0.071 0.035	17 A B 0.094 0.047	A B 0.118 0.059	A B 0.142 0.071	34 A B 0.165 0.083	38 A B 0.189 0.094	42 A B 0.212 0.106
300 x 450	A A A A A A A A A A A A A A A A A A A	m³/s side throw m	3.1 1.8 3.7 2.4 5.2 3.1	3.7 2.1 4.3 2.7 6.1 3.7	4.3 2.4 4.9 3.1 7 4.3	4.6 2.7 5.2 3.4 7.6 4.6	4.9 2.7 5.5 3.7 7.9 4.9	5.2 3.1 6.1 4 8.5 5.2	5.5 3.4 6.4 4.3 9.2 5.5
	45 ∗	m³/s side throw m	0.053 0.053 3.1 3.1 3.7 3.7	0.071 0.071 3.7 3.7 4.3 4.3	0.088 0.088 4.3 4.3 4.9 4.9	0.106 0.106 4.6 4.6 5.2 5.2	0.124 0.124 4.9 4.9 5.5 5.5	0.142 0.142 5.2 5.2 6.1 6.1	0.159 0.159 5.5 5.5 6.4 6.4
	31	m³/s side throw m	5.2 5.2 0.088 0.035 3.4 1.8 4.3 2.4	6.1 6.1 0.118 0.047 4.0 2.1 4.9 2.7	7.2 7.2 0.147 0.059 4.6 2.4 5.5 3.1	7.6 7.6 0.177 0.071 4.9 2.7 6.1 3.4	7.9 7.9 0.206 0.083 5.2 2.7 6.4 3.7	8.5 8.5 0.236 0.094 5.5 3.1 7.0 4.0	9.2 9.2 0.265 0.106 6.1 3.4 7.3 4.3
	■ B	m³/s side throw m	5.8 3.1 0.067 0.079 2.7 2.4	6.7 3.7 0.088 0.106 3.1 2.7	7.6 4.3 0.111 0.133 3.4 3.1	8.2 4.6 0.133 0.159 3.7 3.4	8.8 4.9 0.155 0.186 4.0 3.7	9.5 5.2 0.177 0.212 4.3 4.4	10.1 5.5 0.199 0.239 4.6 4.3
	33 B	m³/s side	3.4 3.1 4.9 4.3 0.071 0.071 3.1 3.1	4.0 3.4 5.5 4.9 0.094 0.094 3.7 3.7	4.6 4.0 6.4 5.5 0.118 0.118 4.3 4.3	4.9 4.3 6.7 6.1 0.142 0.142 4.6 4.6	5.2 4.6 7.3 6.4 0.165 0.165 4.9 4.9	5.5 4.9 7.6 7.0 0.189 0.189 5.2 5.2	6.1 5.2 8.2 7.3 0.212 0.212 5.5 5.5
	37	throw m m³/s side	3.7 3.7 5.2 5.2 0.106	4.3 4.3 6.1 6.1 0.142	4.9 4.9 7.0 7.0 0.177	5.2 5.2 7.6 7.6 0.212	5.5 5.5 7.9 7.9 0.248	6.1 6.1 8.5 8.5 0.283	6.4 6.4 9.2 9.2 0.319
AB	^A 22, 23	throw m	3.7 4.6 6.4 0.142 0.071	4.3 5.2 7.3 0.189 0.094	4.9 5.8 8.2 0.236 0.118	5.2 6.4 9.2 0.283 0.142	5.5 6.7 9.8 0.330 0.165	6.1 7.3 10.4 0.378 0.189	6.4 7.9 11.0 0.425 0.212
AD 0.135 m ²	52 54 55 55 54	m³/s side throw m	3.1 2.7 4.9 3.4 7.0 4.9	4.6 3.1 5.5 4.0 7.9 5.5	5.2 3.4 6.4 4.6 9.2 6.4	5.5 3.7 6.7 4.9 9.8 6.7	6.1 4.0 7.3 5.2 10.4 7.3	6.4 4.3 7.6 5.5 11.3 7.6	7.0 4.6 8.2 6.1 11.9 8.2
	12, 13	m³/s side throw m	0.212 4.3 5.2 7.3	0.283 4.9 6.1 8.5	0.354 5.5 7.0 9.8	0.425 6.1 7.6 10.4	0.496 6.4 7.9 11.3	0.566 7.0 8.5 12.2	0.637 7.3 9.2 12.8
	Return NC+6 Factors -SP=2.3 TP	Total m³/s NC	0.248 - A B	0.330 17 A B	0.413 24 A B	0.496 30 A B	0.578 34 A B	0.661 38 A B	0.743 42 A B
300 x 525	A 43	m³/s side throw m	0.088 0.035 3.4 1.8 4.3 2.4 5.8 3.1	0.118 0.047 4.0 2.1 4.9 2.7 6.7 3.7	0.147 0.059 4.6 2.4 5.5 3.1 7.6 4.3	0.177 0.071 4.9 2.7 6.1 3.4 8.2 4.6	0.206 0.083 5.2 2.7 6.4 3.7 8.8 4.9	0.236 0.094 5.5 3.1 7.0 4.0 9.5 5.2	0.265 0.106 6.1 3.4 7.3 4.3 10.1 5.5
-323	B 45 *	m³/s side throw m	0.053 0.071 3.1 3.1 3.7 3.7	0.071 0.094 3.7 3.7 4.3 4.3	0.088 0.118 4.3 4.3 4.9 4.9	0.106 0.142 4.6 4.6 5.2 5.2	0.124 0.165 4.9 4.9 5.5 5.5	0.142 0.189 5.2 5.2 6.1 6.1	0.159 0.212 5.5 5.5 6.4 6.4
	31	m³/s side throw m	5.2 5.2 0.106 0.035 3.7 1.8 4.6 2.4	6.1 6.1 0.142 0.047 4.3 2.1 5.2 2.7	7.0 7.0 0.177 0.059 4.9 2.4 5.8 3.1	7.6 7.6 0.212 0.071 5.2 2.7 6.4 3.4	7.9 7.9 0.248 0.083 5.5 2.7 6.7 3.7	8.5 8.5 0.283 0.094 6.1 3.1 7.3 4.0	9.2 9.2 0.319 0.106 6.4 3.4 7.9 4.3
	■ A A	m³/s side throw m	6.4 3.1 0.070 0.109 2.7 2.7	7.3 3.7 0.093 0.144 3.1 3.1	8.2 4.3 0.116 0.180 3.4 3.4	9.2 4.6 0.139 0.217 3.7 3.7	9.8 4.9 0.163 0.253 4.0 4.0	10.4 5.3 0.186 0.289 4.3 4.3	11.0 5.5 0.209 0.325 4.6 4.6
	33 A B	m³/s side throw m	3.4 3.4 4.9 4.9 0.088 0.079 3.4 3.4	4.0 4.0 5.5 5.5 0.118 0.106 4.0 4.0	4.6 4.6 6.4 6.4 0.148 0.133 4.6 4.6	4.9 4.9 6.7 6.7 0.177 0.159 4.9 4.9	5.2 5.2 7.3 7.3 0.206 0.186 5.2 5.2	5.5 5.5 7.6 7.6 0.236 0.212 5.5 5.5	6.1 6.1 82.0 8.2 0.265 0.239 6.1 6.1
	37	m³/s side	4.3 4.3 5.8 5.8 0.124	4.9 4.9 6.Y 6.7 0.165	5.5 5.5 7.6 7.6 0.206	6.1 6.1 8.2 8.2 0.248	6.4 6.4 8.8 8.8 0.289	7.0 7.0 9.5 9.5 0.330	7.3 7.3 10.1 10.1 0.372
AD	^A 22, 23	throw m m³/s side	3.7 4.6 6.4 0.177 0.071	4.3 5.2 7.3 0.236 0.094	4.9 5.8 8.2 0.295 0.118	5.2 6.4 9.2 0.354 0.142	5.5 6.7 9.8 0.413 0.165	6.1 7.3 10.4 0.472 0.189	6.4 7.9 11.0 0.531 0.212
AD 0.157 m ²	52 54 55 53	m³/s side throw m	4.3 2.7 5.2 3.4 7.3 4.9 0.248	4.9 3.1 6.1 4.0 8.5 5.5 0.330	5.5 3.4 7.0 4.6 9.8 6.4 0.413	6.1 3.7 7.6 4.9 10.4 6.7 0.496	6.4 4.0 7.9 5.2 11.3 7.3 0.578	7.0 4.3 8.5 5.5 12.2 7.6 0.661	7.3 4.6 9.2 6.1 12.8 8.2 0.743
	12, 13	m³/s side throw m	0.248 4.6 5.5 7.9	0.330 5.2 6.4 9.2	0.413 5.8 7.3 10.4	0.496 6.4 7.9 11.3	0.578 6.7 8.5 12.2	7.3 9.2 12.8	0.743 7.9 9.8 13.7
	Return NC+6 Factors -SP=2.7 TP	Total m³/s NC	0.283 9 A B	0.378 18 A B	0.472 25 A B	0.566 31 A B	0.661 35 A B	0.755 39 A B	0.850 43 A B
300 x 600	42 43 A43	m³/s side throw m	0.106 0.035 3.7 1.8 4.6 2.4 6.4 3.1	0.142 0.047 4.3 2.1 5.2 2.7 7.3 3.7	0.177 0.059 4.9 2.4 5.8 3.1 8.2 4.3	0.212 0.071 5.2 2.7 6.4 3.4 9.2 4.6	0.248 0.083 5.5 2.7 6.7 3.7 9.8 4.9	0.283 0.094 6.1 3.1 7.3 4.0 10.4 5.2	0.319 0.106 6.4 3.4 7.9 4.3 11.0 5.5
	45 *	m³/s side throw m	0.071 0.071 3.1 3.1 3.7 3.7	0.094 0.094 3.7 3.7 4.3 4.3	0.118 0.118 4.3 4.3 4.9 4.9	0.142 0.142 4.6 4.6 5.2 5.2	0.165 0.165 4.9 4.9 5.5 5.5	0.189 0.189 5.2 5.2 6.1 6.1	0.212 0.212 5.5 5.5 6.4 6.4
	31	m³/s side throw m	5.2 5.2 0.124 0.035 3.7 1.8 4.6 2.4	6.1 6.1 0.165 0.047 4.3 2.1 5.2 2.7	7.0 7.0 0.206 0.083 4.9 2.4 5.8 3.1	7.6 7.6 0.248 0.071 5.2 2.7 6.4 3.4	7.9 7.9 0.289 0.083 5.5 2.7 6.7 3.7	8.5 8.5 0.330 0.094 6.1 3.1 7.3 4.0	9.2 9.2 0.372 0.106 6.4 3.4 7.9 4.3
	B	m³/s side throw m	6.4 3.1 0.142 0.071 3.1 2.7	7.3 3.7 0.189 0.094 3.7 3.1	8.2 4.3 0.236 0.118 4.3 3.4	9.2 4.6 0.283 0.142 4.6 3.7	9.8 4.9 0.330 0.165 4.9 4.0	10.4 5.2 0.378 0.189 5.2 4.3	11.0 5.5 0.425 0.212 5.5 4.6
	33 A B	m³/s side throw m	5.2 4.9 0.088 0.097 3.4 3.4	4.3 4.0 6.1 5.5 0.118 0.130 4.0 4.0	4.9 4.6 7.0 6.4 0.148 0.162 4.6 4.6	7.6 6.7 0.177 0.195 4.9 4.9	7.9 7.3 0.206 0.227 5.2 5.2	8.5 7.6 0.236 0.259 5.5 5.5	9.2 8.2 0.275 0.292 6.1 6.1
	B 37	m³/s side	4.3 4.3 5.8 5.8 0.142 4.0	4.9 4.9 6.7 6.7 0.189 4.6	5.5 5.5 7.6 7.6 0.236 5.2	6.1 6.1 8.2 8.2 0.283 5.5	6.4 6.4 8.8 8.8 0.330 6.1	7.0 7.0 9.5 9.5 0.378 6.4	7.3 7.3 10.1 10.1 0.425 7.0
AD	^A 22, 23	throw m m³/s side	4.9 7.0 0.212 0.071	5.5 7.9 0.283 0.094	6.4 9.2 0.354 0.118	6.7 9.8 0.425 0.142	7.3 10.4 0.496 0.165	7.6 11.3 0.566 0.189	8.2 11.9 0.637 0.212
0.180 m ²	52 55 55 54 53	throw m m³/s side	4.3 2.7 5.2 3.4 7.3 4.9 0.283	4.9 3.1 6.1 4.0 8.5 5.5 0.378	5.5 3.4 7.0 4.6 9.8 6.4 0.472	6.1 3.7 7.6 4.9 10.4 6.7 0.566	6.4 4.0 7.9 5.2 11.3 7.3 0.661	7.0 4.3 8.5 5.5 12.2 7.6 0.775	7.3 4.6 9.2 6.1 12.8 8.2 0.850
	12, 13	throw m	4.9 6.1 8.5	5.8 7.0 9.8	6.7 7.9 11.3	7.0 8.5 11.9	7.6 9.2 12.8	8.2 10.1 13.7	8.8 10.7 14.6

 $^{^*}$ These cores are constructed to give as near as possible equal air flow in A & B directions.

Size	Patterns	Neck Vel m/s	1.57	2.10	2.62	3.15	3.67	4.19	4.72
in mm	Return NC+5	TP Pa Total m³/s NC	0.265 9	0.354 18	17 0.442 25	0.531 31	0.619 35	0.708 39	0.796 43
	Factors -SP=2.1 TP	m³/s side	A B 0.077 0.055	A B 0.103 0.074	A B 0.129 0.092	A B 0.155 0.111	A B 0.181 0.129	A B 0.207 0.147	A B 0.232 0.166
375 x 450	A 43	throw m	2.7 2.1 3.4 2.7 4.9 3.7	3.1 2.4 4 3.1 5.5 4.3	3.4 2.7 4.6 3.4 6.4 4.9	3.7 3.1 4.9 3.7 6.7 5.2	4 3.4 5.2 4 7.3 5.5	4.3 3.4 5.5 4.3 7.6 6.1	4.6 3.7 6.1 4.6 8.2 6.4
	A 31	m³/s side throw m	0.105 0.055 3.7 2.1 4.6 2.7	0.140 0.074 4.3 2.4 5.2 3.1	0.175 0.092 4.9 2.7 5.8 3.4	0.210 0.111 5.2 3.1 6.4 3.7	0.245 0.129 5.5 3.4 6.7 4.0	0.280 0.147 6.1 3.4 7.3 4.3	0.315 0.166 6.4 3.7 7.9 4.6
	B	m³/s side throw m	6.4 3.7 0.093 0.080 3.4 2.4	7.3 4.3 0.124 0.106 4.0 2.7	8.2 4.9 0.155 0.133 4.6 3.1	9.2 5.2 0.186 0.159 4.9 3.4	9.8 5.5 0.217 0.186 5.2 3.7	10.4 6.1 0.248 0.212 5.5 4.0	11.0 6.4 0.279 0.239 6.1 4.3
	B 33		4.3 3.1 5.8 4.3 0.077 0.094	4.9 3.4 6.7 4.9 0.103 0.126	5.5 4.0 7.6 5.5 0.129 0.157	6.1 4.3 8.2 6.1 0.154 0.188	6.4 4.6 8.8 6.4 0.180 0.220	7.0 4.9 9.5 7.0 0.206 0.251	7.3 5.2 10.1 7.3 0.232 0.282
	₽ 37	m³/s side throw m	3.4 3.4 4.3 4.3 5.8 5.8	4.0 4.0 4.9 4.9 6.7 6.7	4.6 4.6 5.5 5.5 7.6 7.6	4.9 4.9 6.1 6.1 8.2 8.2	5.2 5.2 6.4 6.4 8.8 8.8	5.5 5.5 7.0 7.0 9.5 9.5	6.1 6.1 7.3 7.3 10.1 10.1
	A 22, 23	m³/s side throw m	0.133 4.0 4.9	0.177 4.6 5.5	0.221 5.2 6.4	0.265 5.5 6.7	0.310 6.1 7.3	0.354 6.4 7.6	0.398 7.0 8.2
AD	A A B	m³/s side	7.0 0.155 0.111 4.9 3.4	7.9 0.207 0.147 5.8 4.0	9.2 0.258 0.184 6.7 4.6	9.8 0.310 0.221 7.0 4.9	10.4 0.362 0.258 7.6 5.2	11.3 0.414 0.295 8.2 5.5	11.9 0.465 0.331 8.8 6.1
0.169 m ²	52 54 55 53	throw m	6.1 4.3 8.5 5.8 0.265	7.0 4.9 9.8 6.7 0.354	7.9 5.5 11.3 7.6 0.442	8.5 6.1 11.9 8.2 0.531	9.2 6.4 12.8 8.8 0.619	10.1 7.0 13.7 9.5 0.708	10.7 7.3 14.6 10.1 0.796
	12, 13	m³/s side throw m	0.265 4.6 5.5 7.9	5.2 6.4 9.2	5.8 7.3 10.4	0.531 6.4 7.9 11.3	6.7 8.5 12.2	7.3 9.2 12.8	7.9 9.8 13.7
	Return NC+6	Total m³/s NC	0.309 9	0.413 18	0.515 25	0.619 31	0.723	0.826 39	0.930 43
275	Factors -SP=2.2 TP	m³/s side	A B 0.099 0.055 3.7 2.1	A B 0.133 0.074 4.3 2.4	A B 0.166 0.092 4.9 2.7	A B 0.199 0.111 5.2 3.1	A B 0.233 0.129 5.5 3.4	A B 0.266 0.147 6.1 3.4	A B 0.299 0.166 6.4 3.7
375 X 525	B 42	throw m	3.7 2.1 4.6 2.7 6.4 3.7 0.077 0.077	4.3 2.4 5.2 3.1 7.3 4.3 0.103 0.103	5.8 3.4 8.2 4.9 0.129 0.129	6.4 3.7 9.2 5.2 0.154 0.154	5.5 3.4 6.7 4.0 9.8 5.5 0.180 0.180	7.3 4.3 10.4 6.1 0.206 0.206	7.9 4.6 11.0 6.4 0.232 0.232
	45 *	m³/s side throw m	3.4 3.4 4.3 4.3 5.8 5.8	4.0 4.0 4.9 4.9 6.7 6.7	4.6 4.6 5.5 5.5 7.6 7.6	0.154 0.154 4.9 4.9 6.1 6.1 8.2 8.2	5.2 5.2 6.4 6.4 8.8 8.8	5.5 5.5 7.0 7.0 9.5 9.5	0.232 0.232 6.1 6.1 7.3 7.3 10.1 10.1
	A A	m³/s side throw m	0.127 0.055 3.7 2.1	0.170 0.074 4.3 2.4	0.212 0.092 4.9 2.7	0.254 0.111 5.2 3.1	0.297 0.129 5.5 3.4	0.339 0.147 6.1 3.4	0.382 0.166 6.4 3.7
	31	m ³ /s side	4.6 2.7 6.4 3.7 0.101 0.109	5.2 3.1 7.3 4.3 0.134 0.144	5.8 3.4 8.2 4.9 0.168 0.180	6.4 3.7 9.2 5.2 0.201 0.217	6.7 4.0 9.8 5.5 0.235 0.253	7.3 4.3 10.4 6.1 0.269 0.289	7.9 4.6 11.0 6.4 0.303 0.325
	33 B	throw m	3.1 2.7 3.7 3.4 5.2 4.9	3.7 3.1 4.3 4.0 6.1 5.5	4.3 3.4 4.9 4.6 7.0 6.4	4.6 3.7 5.2 4.9 7.6 6.7	4.9 4.0 5.5 5.2 7.9 7.3	5.2 4.3 6.1 5.5 8.5 7.6	5.5 4.6 6.4 6.1 9.2 8.2
	♣ 37	m³/s side throw m	0.100 0.105 3.7 3.7 4.6 4.6	0.133 0.140 4.3 4.3 5.2 5.2	0.166 0.175 4.9 4.9 5.8 5.8	0.199 0.210 5.2 5.2 6.4 6.4	0.232 0.245 5.5 5.5 6.7 6.7	0.266 0.280 6.1 6.1 7.3 7.3	0.299 0.315 6.4 6.4 7.9 7.9
	A	m³/s side throw m	6.4 6.4 0.154 4.0	7.3 7.3 0.206 4.6	8.2 8.2 0.258 5.2	9.2 9.2 0.310 5.5	9.8 9.8 0.362 6.1	10.4 10.4 0.413 6.4	11.0 11.0 0.465 7.0
AD	22, 23	m³/s side	4.9 7.0 0.199 0.111	5.5 7.9 0.266 0.147	6.4 9.2 0.331 0.184	6.7 9.8 0.398 0.221	7.3 10.4 0.465 0.258	7.6 11.3 0.532 0.295	8.2 11.9 0.599 0.331
0.197 m ²	52 55 54 55 53	throw m	4.3 3.4 5.2 4.3 7.3 5.8	4.9 4.0 6.1 4.9 8.5 6.7	5.5 4.6 7.0 5.5 9.8 7.6	6.1 4.9 7.6 6.1 10.4 8.2	6.4 5.2 7.9 6.4 11.3 8.8	7.0 5.5 8.5 7.0 12.2 9.5	7.3 6.1 9.2 7.3 12.8 10.1
	12, 13	m³/s side throw m	0.309 4.9 6.1	0.413 5.8 7.0	0.515 6.7 7.9	0.619 7.0 8.5	0.723 7.6 9.2	0.826 8.2 10.1	0.930 8.8 10.7
	Return NC+7	Total m³/s NC	0.354 10	9.8 0.472 19	11.3 0.590 26	11.9 0.708 32	12.8 0.826 36	13.7 0.944 40	14.6 1.060 44
	Factors -SP=2.7 TP	m³/s side	A B 0.122 0.055	A B 0.162 0.074	A B 0.203 0.092	A B 0.244 0.111	A B 0.284 0.129	A B 0.325 0.147	A B 0.365 0.166
375 X 600	B 42	throw m	3.7 2.1 4.6 2.7 6.4 3.7	4.3 2.4 5.2 3.1 7.3 4.3	4.9 2.7 5.8 3.4 8.2 4.9	5.2 3.1 6.4 3.7 9.2 5.2	5.5 3.4 6.9 4.0 9.8 5.5	6.1 3.4 7.3 4.3 10.4 6.1	6.4 3.7 7.9 4.6 11.0 6.4
	▲ B 45 *	m³/s side throw m	0.077 0.100 3.4 3.7 4.3 4.6	0.103	0.129 0.166 4.6 4.9 5.5 5.8	0.154 0.199 4.9 5.2 6.1 6.4	0.180 0.232 52.0 5.5 6.4 6.7	0.206 0.266 5.5 6.1 7.0 7.3	0.232 0.299 6.1 6.4 7.3 7.9
	A	m³/s side throw m	5.8 6.4 0.149 0.055 4.0 2.1	6.7 7.3 0.199 0.074 4.6 2.4	7.6 8.2 0.249 0.092 5.2 2.7	8.2 9.2 0.299 0.111 5.5 3.1	8.8 9.8 0.348 0.129 6.1 3.4	9.5 10.4 0.398 0.147 6.4 3.4	10.1 11.0 0.448 0.166 7.0 3.7
	31	m³/s side	4.9 2.7 7.0 3.7 0.100 0.142	5.5 3.1 7.9 4.3 0.142 0.189	6.4 3.4 9.2 4.9 0.177 0.236	6.7 3.7 9.8 5.2 0.212 0.283	7.3 4.0 10.4 5.5 0.248 0.330	7.6 4.3 11.3 6.1 0.283 0.378	8.2 4.6 11.9 6.4 0.319 0.425
	A 33	throw m	3.7 3.0 4.6 3.7 6.4 .5.2	4.3 3.7 5.2 4.3 7.3 6.1	4.9 4.3 5.8 4.9 8.2 7.0	5.2 4.6 6.4 5.2 9.2 7.6	5.5 4.9 6.7 5.5 9.8 7.9	6.1 5.2 7.3 6.1 10.4 8.5	6.4 5.5 7.9 6.4 11.0 9.2
	B 37	m³/s side throw m	0.122	0.162 0.155 4.3 4.3 5.2 5.2	0.203 0.194 4.9 4.9 5.8 5.8	0.244 0.232 5.2 5.2 6.4 6.4	0.284 0.271 5.5 5.5 6.7 6.7	0.325 0.310 6.1 6.1 7.3 7.3	0.366 0.348 6.4 6.4 7.9 7.9
	•	m³/s side throw m	6.4 6.4 0.177 4.3	7.3 7.3 0.236 4.9	8.2 8.2 0.295 5.5	9.2 9.2 0.354 6.1	9.8 9.8 0.413 6.4	10.4 10.4 0.472 7.0	11.0 11.0 0.531 7.3
AD	A 22, 23	m ³ /s side	5.2 7.3 0.244 0.111	6.1 8.5 0.325 0.147	7.0 9.8 0.406 0.184	7.6 10.4 0.405 0.221	7.9 11.3 0.568 0.258	8.5 12.2 0.650 0.295	9.2 12.8 0.731 0.331
AD 0.225 m ²	52 54 55 53	throw m	4.6 3.4 5.5 4.3 7.9 5.8	5.2 4.0 6.4 4.9 9.2 6.7	5.8 4.6 7.3 5.5 10.4 7.6	6.4 4.9 7.9 6.1 11.3 8.2	6.7 5.2 8.5 6.4 12.2 8.8	7.3 5.5 9.2 7.0 12.8 9.5	7.9 6.1 9.8 7.3 13.7 10.1
	12, 13	m³/s side throw m	0.354 5.2 6.4	0.472 6.1 7.3	0.590 7.0 8.2	0.708 7.6 9.2	0.826 7.9 9.8	0.944 8.5 10.4	1.060 9.2 11.0
			9.2	10.4	11.9	12.8	13.7	14.6	15.6

^{*} These cores are constructed to give as near as possible equal air flow in A & B directions.

Size	Patterns	Neck Vel m/s	1.57	2.10	2.62	3.15	3.67	4.19	4.72
in mm	Return NC+6	TP Pa Total m³/s	0.372	0.496	17 0.618	0.743	0.869	0.991	1.110
	Factors -SP=2.3 TP	NC	9 A B 0.106 0.080	19 A B 0.142 0.106	26 A B 0.177 0.132	32 A B 0.212 0.159	36 A B 0.248 0.186	40 A B 0.283 0.212	A B 0.318 0.239
450 x 525	A 43	m³/s side throw m	3.1 2.4 3.7 3.1 5.2 4.3 0.146 0.080	3.7 2.7 4.3 3.4 6.1 4.9 0.195 0.106	4.3 3.1 4.9 4 7 5.5 0.243 0.133	4.6 3.4 5.2 4.3 7.6 6.1 0.292 0.159	4.9 3.7 5.5 4.6 7.9 6.4 0.341 0.186	5.2 4 6.1 4.9 8.5 7 0.389 0.212	5.5 4.3 6.4 5.2 9.2 7.3 0.438 0.239
	A 31	m³/s side throw m	4.0 2.4 4.9 3.1 7.0 4.3 0.132 0.109	4.6 2.7 5.5 3.4 7.9 4.9 0.176 0.144	5.2 3.1 6.4 4.0 9.2 5.5 0.219 0.180	5.5 3.4 6.7 4.3 9.8 6.1 0.263 0.217	6.1 3.7 7.3 4.6 10.4 6.4 0.308 0.253	6.4 4.0 7.6 4.9 11.3 7.0 0.351 0.289	7.0 4.9 8.2 5.2 11.9 7.3 0.395 0.325
	A 33	m³/s side throw m	4.0 2.7 4.9 3.4 7.0 4.9 0.133 0.119	4.6 3.1 5.5 4.0 7.9 5.5 0.177 0.159	5.2 3.4 6.4 4.6 9.2 6.4 0.221 0.198	5.5 3.7 6.7 4.9 9.8 6.7 0.266 0.238	6.1 4.0 7.3 5.2 10.4 7.3 0.310 0.278	6.4 4.3 7.6 5.5 11.3 7.6 0.354 0.317	7.0 4.6 8.2 6.1 11.9 8.2 0.399 0.357
	B 37	m³/s side throw m m³/s side	4.0 3.7 4.9 4.6 7.0 6.4	4.6 4.3 5.5 5.2 7.9 7.3 0.248	5.2 4.9 6.4 5.8 9.2 8.2 0.309	5.5 5.2 6.7 6.4 9.8 9.2 0.372	6.1 5.5 7.3 6.7 10.4 9.8 0.434	6.4 6.1 7.6 7.3 11.3 10.4 0.496	7.0 6.4 8.2 7.9 11.9 11.0
AD	A 22, 23	throw m	4.3 5.2 7.3	4.9 6.1 8.5 0.283 0.212	5.5 7.0 9.8 0.359 0.264	6.1 7.6 10.4 0.425 0.319	6.4 7.9 11.3 0.496 0.373	7.0 8.5 12.2 0.566 0.425	7.3 9.1 12.8 0.637 0.477
0.236 m²	52 55 54 54 53	m ³ /s side throw m m ³ /s side	4.3 3.7 5.2 4.6 7.3 6.4	4.9 4.3 6.1 5.2 8.5 7.3 0.496	5.5 4.9 7.0 5.8 9.8 8.2 0.618	6.1 5.2 7.6 6.4 10.4 9.2 0.743	6.4 5.5 7.9 6.7 11.3 9.8 0.869	7.0 6.1 8.5 7.3 12.2 10.4	7.3 6.4 9.1 7.9 12.8 11.0
	Return NC+7	throw m	5.2 6.4 9.2 0.425	6.1 7.3 10.4	7.0 8.2 11.9	7.6 9.2 12.8	7.9 9.8 13.7	8.5 10.4 14.6	9.2 11.0 15.6
	Return NC+7 Factors -SP=2.6 TP	NC m³/s side	11 A B 0.133 0.080	20 A B 0.177 0.106	27 A B 0.221 0.133	33 A B 0.266 0.159	37 A B 0.310 0.186	A B 0.354 0.212	45 A B 0.398 0.239
450 x 600	A 43	throw m	4.0 2.4 4.9 3.1 7.0 4.3 0.106 0.106	4.6 2.7 5.5 3.4 7.9 4.9 0.142 0.142	5.2 3.1 6.4 4.0 9.2 5.5 0.177 0.177	5.5 3.4 6.7 4.3 9.8 6.1 0.212 0.212	6.1 3.7 7.3 4.6 10.4 6.4 0.248 0.248	6.4 4.0 7.6 4.9 11.3 7.0 0.283 0.283	7.0 4.3 8.2 5.2 11.9 7.3 0.319 0.319
	■ 45 *	throw m m³/s side	3.7 3.7 4.6 4.6 6.4 6.4 0.173 0.080	4.3 4.3 5.2 5.2 7.3 7.3 0.230 0.106	4.9 4.9 5.8 5.8 8.2 8.2 0.288 0.133	5.2 5.2 6.4 6.4 9.2 9.2 0.345 0.159	5.5 5.5 6.7 6.7 9.8 9.8 0.403 0.186	6.1 6.1 7.3 7.3 10.4 10.4 0.460 0.212	6.4 6.4 7.9 7.9 11.0 11.0 0.518 0.239
	31	throw m m³/s side	4.3 2.4 5.2 3.1 7.3 4.3 0.142 0.142	4.9 2.7 6.1 3.4 8.5 4.9 0.189 0.189	5.5 3.1 7.0 4.0 9.8 5.5 0.236 0.236	6.1 3.4 7.6 4.3 10.4 6.1 0.283 0.283	6.4 3.7 7.9 5.2 11.3 6.4 0.330 0.330	7.0 4.0 8.5 4.9 12.2 7.0 0.378 0.378	7.3 4.3 9.2 5.2 12.8 7.3 0.425 0.425
	△ A B B B 33	throw m m³/s side	4.0 3.1 4.9 3.7 7.0 5.2 0.133 0.146	4.6 3.7 5.5 4.3 7.9 6.1 0.177 0.195	5.2 4.3 6.4 4.9 9.2 7.0 0.221 0.243	5.5 4.6 6.7 5.2 9.8 7.6 0.266 0.292	6.1 4.9 7.3 5.5 10.4 7.9 0.310 0.340	6.4 5.2 7.6 6.1 11.3 8.5 0.354 0.389	7.0 5.5 8.2 6.4 11.9 9.2 0.399 0.438
	37	throw m m³/s side	4.0 4.0 4.9 4.9 7.0 7.0 0.212	4.6 4.6 5.5 5.5 7.9 7.9 0.283	5.2 5.2 6.4 6.4 9.2 9.2 0.354	5.5 5.5 6.7 6.7 9.8 9.8 0.425	6.1 6.1 7.3 7.3 10.4 10.4 0.496	6.4 6.4 7.6 7.6 11.3 11.3 0.566	7.0 7.0 8.2 8.2 11.9 11.9 0.637
AD	A 22, 23	throw m m³/s side	4.3 5.2 7.3 0.265 0.160	4.9 6.1 8.5 0.354 0.212	5.5 7.0 9.8 0.443 0.265	6.1 7.6 10.4 0.531 0.319	6.4 7.9 11.3 0.620 0.372	7.0 8.5 12.2 0.708 0.425	7.3 9.2 12.8 0.797 0.478
AD 0.27 m ²	52 55 55 54 53	throw m m³/s side	4.6 3.7 5.5 5.2 7.9 6.4 0.425	5.2 4.3 6.4 5.5 9.2 7.3 0.566	5.8 4.9 7.3 5.8 10.4 8.2 0.708	6.4 5.2 7.9 6.4 11.3 9.2 0.850	6.7 5.5 8.5 6.7 12.2 9.8 0.991	7.3 6.1 9.2 7.2 12.8 10.4 1.133	7.9 6.4 9.8 7.9 13.7 11.1 1.270
	12, 13	throw m	5.5 7.0 9.5	6.4 7.9 11.0	7.3 9.2 12.5	7.6 9.8 13.4	8.5 10.4 14.6	9.2 11.3 15.6	9.8 11.9 16.5
	Return NC+8 Factors -SP=3.2 TP	Total m³/s NC	0.496 12 A B	0.661 21 A B	0.826 28 A B	0.991 34 A B	1.156 38 A B	1.322 42 A B	1.490 46 A B
525 x 600	A A A A A A A A A A A A A A A A A A A	m³/s side throw m	0.139 0.109 3.4 2.7 4.3 3.4 5.8 4.9	0.186 0.144 4.0 3.1 4.9 4.0 6.7 5.5	0.233 0.180 4.6 3.4 5.5 4.6 7.6 6.4	0.279 0.217 4.9 3.7 6.1 4.9 8.2 6.7	0.326 0.253 5.2 4.0 6.4 5.2 8.8 7.3	0.372 0.289 5.5 4.3 7.0 5.5 9.5 7.6	0.419 0.325 6.1 4.6 7.3 6.1 10.1 8.2
	A 31	m³/s side throw m	0.194	0.258	0.323	0.387 0.217 6.1 3.7 7.6 4.9 10.4 6.7	0.452 0.253 6.4 4.0 7.9 5.2 11.3 7.3	0.517 0.289 7.0 4.3 8.5 5.5 12.2 7.6	0.581 0.325 7.3 4.6 9.2 6.1 12.8 8.2
	A 33	m³/s side throw m	0.177	0.236 0.189 4.9 3.7 6.1 4.3 8.5 6.1	0.295 0.236 5.5 4.3 7.0 4.9 9.8 7.0	0.354	0.414 0.331 6.4 4.9 7.9 5.5 11.3 7.9	0.471 0.377 7.0 5.2 8.5 6.1 12.2 8.5	0.532
	B 37	m³/s side throw m	0.170	0.227 0.217 4.3 4.3 5.2 5.2 7.3 7.3	0.283 0.271 4.9 4.9 5.8 5.8 8.2 8.2	0.340 0.326 5.2 5.2 6.4 6.4 9.2 9.2	0.397 0.380 5.5 5.5 6.7 6.7 9.8 9.8	0.453	0.510 0.486 6.4 6.4 7.9 7.9 11.0 11.0
AD	A 22, 23	m³/s side throw m	0.248 4.6 5.5 7.9 0.279 0.217	0.330 5.2 6.4 9.2 0.372 0.289	0.413 5.8 7.3 10.4 0.465 0.361	0.496 6.4 7.9 11.3	0.578 6.7 8.5 12.2 0.652 0.505	0.661 7.3 9.2 12.8 0.744 0.578	0.744 7.9 9.8 13.7 0.838 0.650
AD 0.315 m ²	52 54 55 55 54	m ³ /s side throw m m ³ /s side	4.9 4.0 6.1 4.9 8.5 7.0	5.8 4.6 7.0 5.5 9.8 7.9 0.661	6.7 5.2 7.9 6.4 11.3 9.2 0.826	7.0 5.5 8.5 6.7 11.9 9.8	7.6 6.1 9.2 7.3 12.8 10.4 1.160	8.2 6.4 10.1 7.6 13.7 11.3	8.8 7.0 10.7 8.2 14.6 11.9
	12, 13	throw m	5.8 7.3 10.1	6.7 8.2 11.6	7.6 9.5 13.1	8.2 10.1 14.3	8.8 11.0 15.3	9.5 11.6 16.5	10.1 12.5 17.4

 $^{{}^{*}}$ These cores are constructed to give as near as possible equal air flow in A & B directions.