

DESIGN OF VERTICAL SCRUBBER

<i>company</i>	Askove	
<i>project</i>	SO2 removal without chemicals	
<i>date</i>	18-4-2014	
Data from customer		
Flow in	881	nm3/h
Flow in	913	m3/h
Temperature in (gas and liquid)	10	C
Pressure in	1	kPa
pollution	H3PO4	-
Concentration in	246	mg/nm3
Concentration out	3	mg/nm3
Liquid parameters		
Washing liquid: diluted	33% NaOH	-
pH washing liquid in nozzle	0,1	
pH washing liquid in sump	0,1	-
water load	20	m3/m2.h
Flows washing liquid	4,00	m3/h
type of fresh water	water	
Flow (soft) water	0,0	m3/h
33% NaOH	0,0000	m3/h
Flow drain	0,0	m3/h
Columns parameters		
Material of gas scrubber	PE	-
surface column	0,20	m2
Diameter Column	0,50	m
Height of packing material	2,5	m
Amount of packing material	0,49	m3
Type of packing material	38-1	-
Material of packing material	PP	-
Specific surface of packing material	150	m2/m3
Void fraction of packing material	94	%
Weight of packing material	89	kg/m3
Surface of packing material	74	m2
Pressure drop over total packing	320	Pa
Flooding Factor	32	%
Gas velocity	1,29	m/s
Contact time	1,94	s
capacity circulation pump	4,00	m3/h
type of water distribution	nozzle	-
Volume buffering tank	0,05	m3
Level indication buffer tank	Tube DN40	mm.