## **REFERENCE LIST**

SEMICONDUCTOR SOLAR PHARMA POWER GENERATION FOOD & BEVERAGE **PULP AND PAPER** CHEMICAL OIL AND GAS MINING AEROSPACE AND TRANSPORT



## Process & Wastewater Treatment

## In the Pulp and Paper Industry



Client	Plant Type	Capacit	ty
Mondi Syktivkar/Germany	Feasibility Study for WWTP upgrade	12,000	m³/l
UPM	Tertiary Paper Wastewater Treatment		
Plattling/Germany	Extension of wastewater treatment with tertiary ozonation and biofiltration ${\rm BIOFIT}^{\textcircled{R}}$ F	510	m³/
UPM Nordland Papier/Germany	Retrofitting two MBBR for pretreating wastewater from the paper industry		
	Aeration with AEROFIT V and BIOFIT <sup>®</sup> C1 carrier	750	m³/
SCA	Treatment of wastewater from the paper industry		
Sovetsk/Russia	Extension of raw water treatment with filtration Extension of wastewater treatment with FLOCOMAT <sup>®</sup> , moving bed reactor BIOFIT <sup>®</sup> H, aeration AEROFIT V, and biofiltration BIOFIT <sup>®</sup> F	180	m³/
Vinakraft	Treatment of wastewater from the paper industry		
Vietnam	Decalcification DECAFIT with AEROFIT V aerator and FLOCOPAC <sup>®</sup> thickener	250	m³/
Mondi	Treatment of wastewater from the paper industry		
Swiecie/Poland	Wastewater treatment plant refurbishment with AEROFIT V aerator	2,900	m³∕
PF Wattens Wattens/Austria	Treatment of wastewater from the paper industry		
	Single-stage biofiltration (BIOFIT <sup>®</sup> F)	350	m³/
Mondi	Condensate polishing plant		
Syktyvkar/Russia	Cartridge filter, mixed bed exchanger, regeneration station, condensate storage tank	3 x 400	m³∕
Julius Schulte Trebsen/Germany	Treatment of wastewater from the paper industry		
	Wastewater treatment plant refurbishment with AEROFIT V aerator	120	m³∕
TAZV Eisenhüttenstadt	Treatment of wastewater from the paper industry		
Eisenhüttenstadt/Germany	Decalcification DECAFIT with AEROFIT V aerator and FLOCOPAC <sup>®</sup> thickener	960	m³∕
PM Gmund	Treatment of wastewater from the paper industry		
Gmund/Germany	Membrane bioreactor MBR	33	m³/
PM Königstein	Treatment of wastewater from the paper industry		
Königstein/Germany	Membrane bioreactor MBR	70	m³/
RKTK	Treatment of wastewater from the paper industry		
Rubesnoye/Ukraine	Refurbishment aeration – moving bed anaerobic	500	m³/
IPEK KAGIT	Treatment of wastewater from the paper industry		
Turkey	New wastewater treatment plant with BIOFIT <sup>®</sup> F biofiltration and thickening for filter backwash wastewater	200	m³/

Client	Plant Type	Capacity
SCA Mainz-Kostheim	Treatment of wastewater from the paper industry	
Mainz-Kostheim/Germany		
	New wastewater treatment plant with ANAFIT® AC	220 m³/h
	anaerobic reactor with cogeneration unit, DECAFIT deliming, nitrification, and denitrification	
PMT	Treatment of wastewater from the paper industry	
Egypt	New wastewater treatment plant with FLOCOMAT <sup>®</sup> T	60 m³/h
	Treatment of row and working from the news	
Bellesbumprom, Shklov/Belarus	Treatment of raw and wastewater from the paper industry	
	New raw water treatment plant with FLOCOPAC <sup>®</sup> L	270 m³/h
	New wastewater treatment plant with FLOCOMAT <sup>®</sup> T,	
	aerobic moving bed reactor, aeration AEROFIT V,	
	aeration BIOFIT <sup>®</sup> F biofiltration, and tertiary treatment	
SCA	Treatment of raw and wastewater from tissue	
Tula/Russia	production	
	New raw water treatment plant with filtration	30,000 t/year
	New wastewater treatment plant with aerobic moving bed	
	reactor, aeration and AEROFIT V biofiltration	
Phuong Nam	Treatment of raw and wastewater from the pulp	
Vietnam	industry	100,000 t/year
	New raw water treatment plant with filtration	
	New wastewater treatment plant with anaerobic ANAFIT®	
	AC high-performance stage and AEROFIT V aeration.	
Sappi Stockstadt GmbH (form. M-real)	Treatment of wastewater from the pulp industry	
Stockstadt/Germany	Extension of plant capacity with BIOFIT <sup>®</sup> H biological	160,000 t/year
	high-performance stage upstream pure oxygen activated	
	sludge plant	
Feinpappenwerk Gebr. Schuster Hebertshausen/Germany	Treatment of wastewater resulting from carton production	
	Already existing trickling filter substituted by aerated	70 m³/h
	BIOFIT <sup>®</sup> H high-performance stage upstream of an	
	activated sludge plant	
Perlen Papier AG	Treatment of wastewater resulting from the paper	
Perlen/Switzerland	industry	
	Extension of the existing activated sludge plant by a	660 m³/h
	BIOFIT <sup>®</sup> H aerated high-performance stage	
Stora Enso Maxau GmbH & Co. KG	Treatment of wastewater resulting from the paper	
Karlsruhe/Germany	industry	
	Optimisation of wastewater treatment plant by pre-	850 m³/h
	sedimentation with turbine circulation and extension by	
	BIOFIT <sup>®</sup> H biological high-performance stage and partial	
Depertury Licial	stream cooling	
Paperfabrik Haindl Werk Walsum	Treatment of wastewater resulting from the paper industry	
Walsum/Germany	Refurbishment of bio-filtration,	1,000 m³/h
	5 filter systems à 22 m <sup>2</sup> , BIOFIT <sup>®</sup> F	,

Client	Plant Type	Capacit	ty
Buchmann Karton	Treatment of wastewater from carton production		
Annweiler/Germany	Fluidised bed reactor (two-stage), connecting piping, civil works, additional post-clarification basin (second stage of extension)	500	m³/
Papierfabrik Palm Aalen/Germany for Fab in Eltmann	Boiler feed water treatment Filter for manganese removal, desalination	14	m³/
Felix Schoeller	Demineralisation		
Weissenborn/Germany	Cation, anion, and mixed bed exchangers Condensate polishing	2 x 15	m³/
	Cation and mixed bed exchangers	1 x 40	m³/
Musi Pulp Mill Sumatra/Indonesia	Treatment of raw and wastewater from the pulp industry Kraft pulp (bleached)	500,000	t/voc
	New raw water treatment plant with FLOCOPLUS <sup>®</sup> and filtration New wastewater treatment plant with primary sedimentation, activated sludge process, and sludge thickening	300,000	U y C C
Ahlstrom-Jagenberg GmbH Neuss/Germany	Treatment of wastewater from the paper industry Single-stage biofiltration (BIOFIT <sup>®</sup> F)	300	m³/
Carl Machen Brunnenthal/Germany	Treatment of wastewater from carton production		
	Extension of the existing activated sludge treatment by anaerobic fluidised bed	700	m³/
SCA Laakirchen AG	Treatment of wastewater from the paper industry		
Laakirchen/Germany	Biofiltration with 8 BIOFIT <sup>®</sup> filters	10,300	m³/
Ahlstrom-Kämmerer GmbH	Treatment of wastewater from the paper industry		
Osnabrück/Germany	Single-stage biofiltration (BIOFIT <sup>®</sup> F)	600	m³/
Papierfabrik Königstein	Treatment of wastewater from the paper industry		
Königstein/Germany	Two-stage biofiltration (BIOFIT <sup>®</sup> F)	125	m³/
Buchmann GmbH Kartonfabrik	Treatment of wastewater from carton production		
Annweiler/Germany	Biofiltration (BIOFIT <sup>®</sup> F) downstream of existing activation	420	m³/
Schoeller & Hoesch Gernsbach/Germany	Treatment of wastewater from the paper industry		
MD Papier GmbH	Single-stage biofiltration (BIOFIT <sup>®</sup> F) Treatment of surface water to produce process water	1,500	m³/
Dachau/Germany	Cooling tower for wastewater cooling Two-stage biofiltration (BIOFIT <sup>®</sup> F) with flotation for filter backwash wastewater	900 690	

Client	Plant Type	Capacit	ty
PWA Stockstadt	Treatment of wastewater from the paper industry		
Stockstadt/Germany			0.4
	Chemico-physical wastewater treatment (FLOCOPAC <sup>®</sup> L) Two-stage biofiltration (BIOFIT <sup>®</sup> F)		m³/l m³/l
	Aerobic biological wastewater treatment (pure oxygen		m³/ł
	biology)		
Papierfabrik Scheufelen GmbH	Demineralisation		
Lenningen/Germany	Cation exchanger, CO <sub>2</sub> trickling degasifier, anion exchanger	2 x 25	m³∕ł
	Condensate polishing		- "
	Activated carbon filter, cation exchanger, mixed bed	100	m³/ł
	exchanger		
Drewsen Spezialpapiere GmbH & Co.	Treatment of wastewater from the paper industry		
KG Lachendorf/Germany	Two-stage biofiltration (BIOFIT <sup>®</sup> F)	280	m³/h
Sari Paper and Board Mill	Treatment of wastewater from carton production		
Mazandaran/Iran	Aerobic biological wastewater treatment	850	m³/h
Enso Gutzeit Oy/	Treatment of wastewater from the paper industry		
Sachsenpapier AG	FLOCOPAC <sup>®</sup> L and filtration (FILTRO G)	800	m³/h
PWA Stockstadt Stockstadt am Main/Germany	Treatment of wastewater from the pulp industry		
	Bleached paper pulp (magnesium hydrogen sulphite process)	160,000	t/yea
	Pure oxygen activated sludge plant		
Feinpappenwerk	Treatment of wastewater from carton production		
Gebr. Schuster Herbertshausen/Germany	Biological wastewater treatment (trickling filters activator- NKL)	70	m³/ł
Zanders Feinpapiere AG	Treatment of wastewater from the paper industry		
Bergisch Gladbach/Germany	Biological treatment	1,080	m³/ł
	Biological wastewater treatment (VKL-activator-NKL)	960	m³/ł
Peter Temming AG	Treatment of wastewater from the paper industry		
Glückstadt/Germany	Biological treatment (linters wastewater)	750	m³/ł
	Flotation		m³/ł
	FLOCOPAC <sup>®</sup> L honeycomb clarifier for further	1,300	
	clarification Biological treatment (activator, flotation, BIOFIT <sup>®</sup> F)	200	m³∕ł
Holtzmann E & Cie. GmbH	Demineralisation		
Fab Maxau Karlsruhe/Germany	Multimedia filter, cation exchanger, CO <sub>2</sub> trickling	2 x 34	m3/k
nanorano, Connany	degasifier, compound anion exchanger, mixed bed exchanger	2 × 04	111-71
Papierfabrik Haindl	Treatment of wastewater from the paper industry		
Werk Walsum/Germany	Sedimentation	1,000	m³/ŀ
	Biological filtration BIOFIT <sup>®</sup> F		m³/ł

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Papierfabrik Mochenwangen	Treatment of wastewater from the paper industry		
Mochenwangen/Germany		250 – 450	m³/l
	Chemico-physical treatment with sludge dewatering Turbo-circulator/band filter press, trickling filter FLOCOPAC <sup>®</sup> L and BIOFIT <sup>®</sup> F	300	m³/l
Munskj Dekor GmbH Aalen-Unterkochen/Germany	Treatment of wastewater from the paper industry		
	Biological filtration with BIOFIT <sup>®</sup> F	700	m³/l
Schoeller + Hoesch GmbH	Demineralisation		
Gernsbach/Germany	Servo® CLEANFLOW	3 x 250	m³/
Julius Glatz GmbH	Treatment of wastewater from the paper industry		
Neidenfels/Germany	Biological filtration with BIOFIT <sup>®</sup> F	1,000	m³/
MD Papier GmH Plattling/Germany	Treatment of wastewater from the paper industry		
Flatting/Germany	Extension of a plant installed in 1981 (installation of a second line of identical design)	2 x 270	m³/
Leykam Mürztaler Papier- und	Treatment of wastewater from the paper industry		
Zellstoff AG Gratkorn-Gratwein/Austria	Sedimentation, biological treatment with pure oxygen 30t/d $\mbox{BSB}_5$	3,000	m³/
Leykam Mürztaler Papier und Zellstoff AG	Treatment of wastewater from the pulp industry		
Gratkorn-Gratwein /Austria	Bleached paper pulp (magnesium hydrogen sulphite process)	210,000	t/yea
	Pure oxygen activated sludge plant		
Homburger Papierfabrik W. Geldmacher GmbH	Treatment of wastewater from the paper industry		
Nürnbrecht/Germany	FLOCOMAT <sup>®</sup> T, sludge press	80	m³/
Hannover Papier	Treatment of wastewater from the pulp industry		
Alfeld/Germany	Anaerobic contact sludge treatment	1,600	m³/
Delligser Papierfabrik	Treatment of wastewater from the paper industry		
PVA GmbH und Co. Delligsen/Germany	Biological treatment with trickling filters and biofilters	105	m³/
MD Papier GmbH	Treatment of wastewater from the paper industry		
Plattling/Germany	Sedimentation (turbo-circulator), biological treatment (AEROFIT D)	270	m³/
Niederrheinische Papier- und	Treatment of wastewater from the paper industry		
Kartonfabrik GmbH Neuss/Germany	Sedimentation (FLOCOMAT <sup>®</sup> T), sludge dewatering (PressDeg)	400	m³/
PWA Werk Miesbach	Treatment of wastewater from the paper industry		
Miesbach/Germany	Biological treatment DP 230	360	m³/
Gissler und Pass AG Jülich/Germany	Treatment of wastewater from the paper industry		
callor, connany	Closed water circulation with trickling filters, FLOCOMAT <sup>®</sup> T	60 / 90	m³/

Client	Plant Type	Capacit	ty
Papierfabrik Miltenberg Miltenberg/Germany	Treatment of wastewater from the paper industry		
5 7	Sedimentation	120	m³/h
Papierfabrik Jass Fulda/Germany	Treatment of wastewater from the paper industry		
	Sedimentation	200	m³/h
Papierfabrik Grünewald Kirchhunden/Germany	Treatment of wastewater from the paper industry		
	Sedimentation	200	m³/h
Feldmühle AG Hagen/Germany	Treatment of wastewater from the paper industry		
	Sedimentation	1,000	m³/h
	Biological treatment		
Norddeutsche Papierwerke GmbH Düsseldorf- Reisholz/Germany	Condensate polishing	100	m³/h
Papier und Zellstoffabrik Teisnach/Germany	Condensate polishing	40	m³/h

**H+E** ranks among the world's leading suppliers in the fields of: water & wastewater treatment, and energy efficiency. Based on its global presence, the **H+E GROUP** has completed projects in over 50 countries.





Tel: +44 1403 272772

sales@he-water.co.uk www.he-water.co.uk