



*We protect, design and drain*

**The ACO Group –**

**Drainage and water treatment solutions**



111

112

113

114

115

116

117

118

119

120

121

122

123

124

125

126

127

128

129

130

131

132

133

134

135

136

137

138

139

140

141

142

143

144

145

146

147

148

149

150

151

152

153

154

155

156

157

158

159

160

161

162

163

164

165

166

167

168

169

170

171

172

173

174

175

176

177

178

179

180

181

182

183

184

185

186

187

188

189

190

191

192

193

194

195

196

197

198

199

200

201

202

203

204

205

206

207

208

209

210

211

212

213

214

215

216

217

218

219

220

221

222

223

224

225

226

227

228

229

230

231

232

233

234

235

236

237

238

239

240

241

242

243

244

245

246

247

248

249

250

251

252

253

254

255

256

257

258

259

260

261

262

263

264

265

266

267

268

269

270

271

272

273

274

275

276

277

278

279

280

281

282

283

284

285

286

287

288

289

290

291

292

293

294

295

296

297

298

299

300

301

302

303

304

305

306

307

308

309

310

311

312

313

314

315

316

317

318

319

320

321

322

323

324

325

326

327

328

329

330

331

332

333

334

335

336

337

338

339

340

341

342

343

344

345

346

347

348

349

350

351

352

353

354

355

356

357

358

359

360

361

362

363

364

365

366

367

368

369

370

371

372

373

374

375

376

377

378

379

380

381

382

383

384

385

386

387

388

389

390

391

392

393

394

395

396

397

398

399

400

401

402

403

404

405

406

407

408

409

410

411

412

413

414

415

416

417

418

419

420

421

422

423

424

425

426

427

428

429

430

431

432

433

434

435

436

437

438

439

440

441

442

443

444

445

446

447

448

449

450

451

452

453

454

455

456

457

458

459

460

461

462

463

464

465

466

467

468

469

470

471

472

473

474

475

476

477

478

479

480

481

482

483

484

485

486

487

488

489

490

491

492

493

494

495

496

497

498

499

500

501

502

503

504

505

506

507

508

509

510

511

512

513

514

515

516

517

518

519

520

521

522

523

524

525

526

527

528

529

530

531

532

533

534

535

536

537

538

539

540

541

542

543

544

545

546

547

548

549

550

551

552

553

554

555

556

557

558

559

560

561

562

563

564

565

566

567

568

569

570

571

572

573

574

575

576

577

578

579

580

581

582

583

584

585

586

587

588

589

590

591

592

593

594

595

596

597

598

599

600

601

602

603

604

605

606

607

608

609

610

611

612

613

614

615

616

617

618

619

620

621

622

623

624

625

626

627

628

629

630

631

632

633

634

635

636

637

638

639

640

641

642

643

644

645

646

647

648

649

650

651

652

653

654

655

656

657

658

659

660

661

662

663

664

665

666

667

668

669

670

671

672

673

674

675

676

677

678

679

680

681

682

683

684

685

686

687

688

689

690

691

692

693

694

695

696

697

698

699

700

701

702

703

704

705

706

707

708

709

710

711

712

713

714

715

716

717

718

719

720

721

722

723

724

725

726

727

728

729

730

731

732

733

734

735

736

737

738

739

740

741

742

743

744

745

746

747

748

749

750

751

752

753

754

755

756

757

758

759

760

761

762

763

764

765

766

767

768

769

770

771

772

773

774

775

776

777

778

779

780

781

782

783

784

785

786

787

788

789

790

791

792

793

794

795

796

797

798

799

800

801

802

803

804

805

806

807

808

809

810

811

812

813

814

815

816

817

818

819

820

821

822

823

824

825

826

827

828

829

830

831

832

833

834

835

836

837

838

839

840

841

842

843

844

845

846

847

848

849

850

851

852

853

854

855

856

857

858

859

860

861

862

863

864

865

866

867

868

869

870

871

872

873

874

875

876

877

878

879

880

881

882

883

884

885

886

887

888

889

890

891

892

893

894

895

896

897

898

899

900

901

902

903

904

905

906

907

908

909

910

911

912

913

914

915

916

917

918

919

920

921

922

923

924

925

926

927

928

929

930

931

932

933

934

935

936

937

938

939

940

941

942

943

944

945

946

947

948

949

950

951

952

953

954

955

956

957

958

959

960

961

962

963

964

965

966

967

968

969

970

971

972

973

974

975

976

977

978

979

980

981

982

983

984

985

986

987

988

989

990

991

992

993

994

995

996

997

998

999

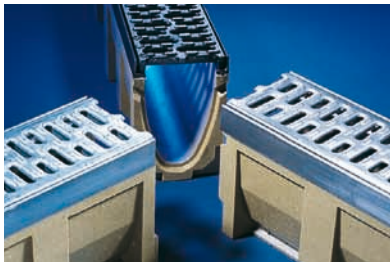
1000

*We protect, design and drain*

**The ACO Group –  
Drainage and water treatment solutions**



ACO system solutions worldwide





4 — ACO products – High tech and craftsmanship

6 — The ACO Group

### External Drainage

8 — Line drainage system

10 — Line drainage – all purpose system

12 — Line drainage – heavy duty

14 — Line drainage – all-rounder

16 — Line drainage – monocast

17 — Line drainage – large capacity

18 — Line drainage – roadside drainage

20 — Line drainage – architectually attractive solutions

24 — Line drainage – individual solutions in stainless steel

26 — Line drainage – domestic and economical solutions

28 — Point drainage

### Landscaping

32 — ACO tree grate systems and grass grids

### Access and Manhole Covers

34 — Access and Manhole covers – multiple and recessed

### ACO SPORT

36 — ACO SPORT drainage systems

38 — ACO SPORT construction elements and accessories

### Roof Drainage

40 — Gravity roof drainage

41 — Siphonic roof drainage

### ACO Pipe

42 — Stainless steel pipework system

43 — Galvanizes steel pipework system

### Building Drainage

44 — Sanitary gullies – corrosion resistant and hygienic

46 — Shower drainage – architectually attractive solution

48 — Stainless steel drainage

### Separator Technology

50 — Grease separators and grease traps

52 — Petrol separators

### Cellar Drainage / Backflow Preventers

54 — Backflow preventers

56 — Wastewater raising pumps and submersible pumps

### Wastewater Treatment Technology

58 — ACO Maripur

59 — ACO Biocompact

60 — ACO references

62 — The ACO Group companies worldwide

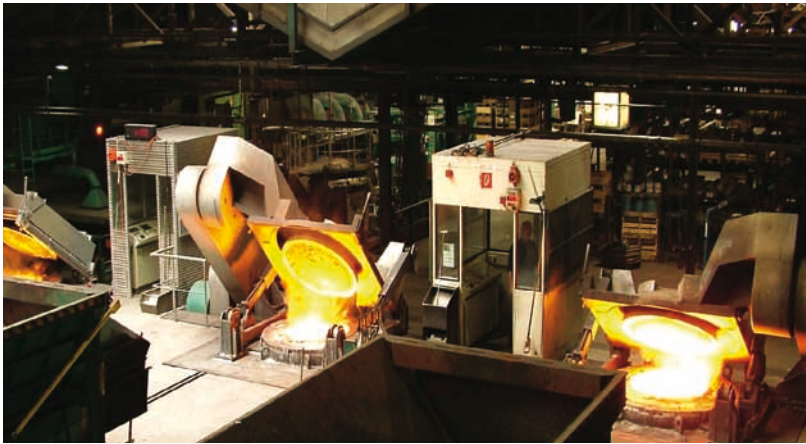


## High-tech and craftsmanship – our products

*We manufacture our products world-wide at 31 modern environmentally-compatible production sites. ACO's high quality and productivity is based on the Group's world-wide expertise. In-depth research and development, and manufacturing competence built up over many years, create a solid platform for the processing of our most important materials: polymer concrete, stainless steel, plastic, cast iron and reinforced concrete.*



**Polymer concrete:** ACO is easily the world's biggest producer of polymer concrete. The first drainage products made of polymer concrete were launched at the end of the 1960's – they are still in use today and show no signs of damage. 13 of the ACO Group's sites produce the polymer concrete products which launched ACO on the road to success.



**Cast iron:** we have developed the traditional locations in Kaiserslautern and Aarbergen into high-tech production sites enjoying a high level of competitiveness in the international markets. The Michelbacher Hütte in Aarbergen is one of Germany's oldest foundries, with a history going back to 1652.



**Stainless steel:** stainless steel sheets are processed throughout the ACO Group worldwide. High levels of investment ensure that our production plants are always state of the art, and produce innovative and competitive products.



**Concrete:** we have produced reinforced concrete collectors and pump shafts for underground use for over thirty years. Together with our metal and plastic collectors, this makes us the market leader in Europe.



**Plastic:** many ACO products benefit from the innovations and further developments generated by our plastics manufacturing activities. We process different kinds of plastic including



PVC, polycarbonate, polypropylene and polyethylene in three different processes: injection, rotomoulding and extrusion.

## Commitment to quality

Our modern, state of the art manufacturing plant produces high quality products which have been used in world wide projects.

- ISO 9001
- EN 1433
- EN 124
- KIWA – Third Party Control
- MPA – Material Testing Institute
- LGA – German Quality Institute
- LET – Quality Association for Drainage Technology
- DIBT – German Institute for Building Technology
- Member of the World Plumbing Council



Quality controls throughout the production process guarantee unchanging standards of high quality you can trust. We use an integrated quality assurance system underpinned by state-of-the-art computer backed testing equipment to monitor the required standards.





The headquarter of the ACO Group in Rendsburg, Germany



## ACO worldwide

*We are present with independent companies in over 40 countries on all continents. We have our own production sites in 12 countries including Australia and the USA. At the same time as respecting national cultural differences, the focus of our marketing activities is always the ACO brand with its excellent image, high quality standards and unique competence. ACO Group is the worldwide leader in the manufacture and supply of corrosion-resistant polymer concrete and stainless steel drainage systems for external and internal applications. With more than 40 years of valuable experience in the removal and containment of wastewater, ACO is now entering the field of wastewater management with systems for the treatment and re-use of grey water.*

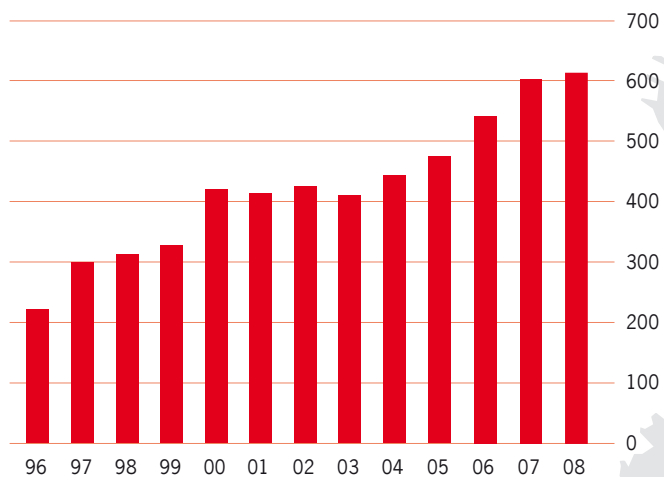


ACO United Kingdom, Sheffield.



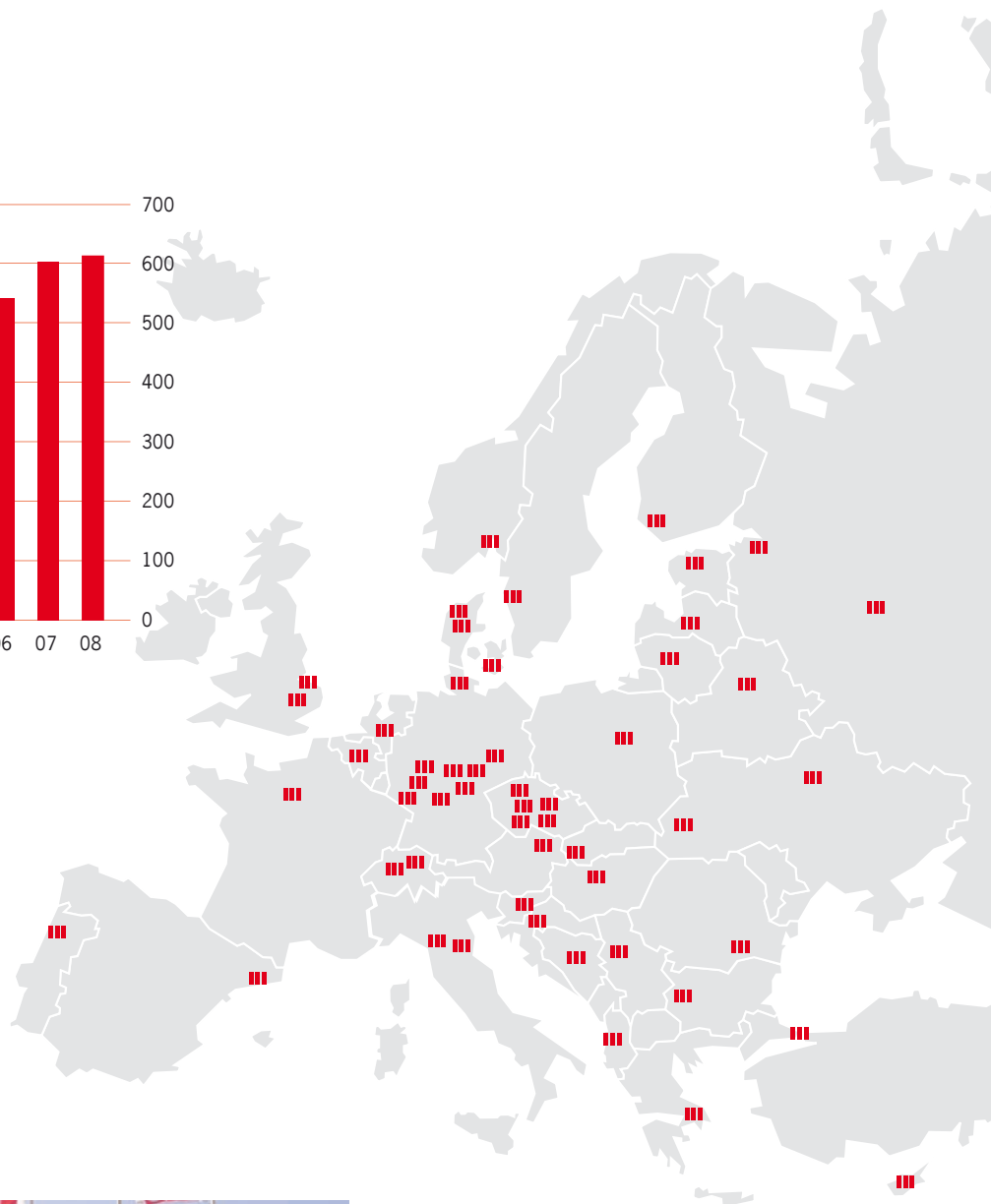
ACO Austria, Baden.

Global sales development in million Euro



#### ACO group at a glance:

- 3500 staff in more than 40 countries (Europe, America, Asia, Australia)
- 31 production sites in thirteen countries
- Sales 2008: Euro 610 million



ACO Academy, Germany, Rendsburg.



ACO USA, Casa Grande.



ACO Czech Republic, Přebyslav.



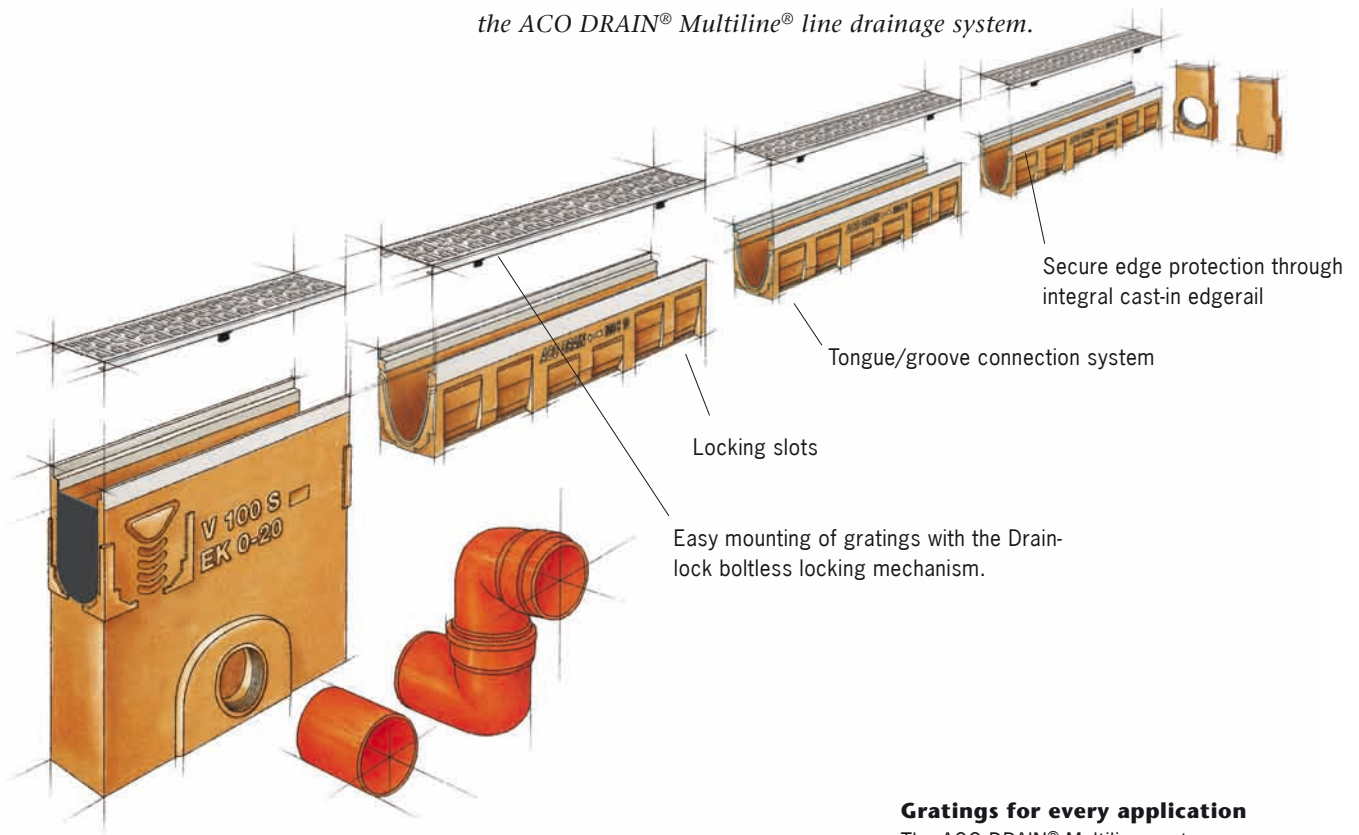
ACO Australia, Emu Plains.



ACO Switzerland, Netstal.

### ACO DRAIN® line drainage system– freedom of design through product versatility

*The ACO DRAIN® programme is a genuine modular system: individual, personalised solutions can be combined from a range of channels, gratings and system accessories such as sump boxes – a system which will convince you in terms of technology and economy. Take for example the ACO DRAIN® Multiline® line drainage system.*



The sump box can be cut to allow any depth of channel connection.



Traffic-safe locking of all gratings using the Drainlock locking mechanism.

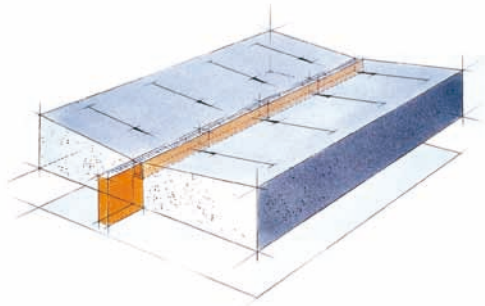
#### Gratings for every application

The ACO DRAIN® Multiline system solution has a simple range of different gratings suitable for most architectural requirements in terms of aesthetics, functionality and strength. The gratings can be combined as required independent of the channel body and are suitable for all load classes from A 15 to E 600.



ACO DRAIN® grating range:  
Clear, flexible, creative.





### ACO DRAIN® line drainage system: Protecting buildings, designing paved surfaces

Traditionally, point or cast-in-place drainage has been used to provide surface water removal for all types of applications. On face value they often appear to be the cheapest methods around. Certainly material costs can be low. However, when installation, labour and site preparation costs are taken into calculation, significant savings can be made by using precast channel drainage systems.

ACO is the world leader in the design and manufacture of polymer concrete surface drainage systems. ACO DRAIN® surface drainage systems are designed to carry surface water and other liquids efficiently from a paved or hard-surface area to the underground drainage system.

### What is polymer concrete?

Polymer concrete is a versatile highly durable material. It is a mixture of mineral aggregates and resins, which forms a lightweight, corrosion resistant material ideally suited to channel drainage.

#### ■ Strength

Polymer concrete has approximately four times the compressive strength of conventional concrete at the half the weight of an equivalent section.

#### ■ Lightweight for easy installation

ACO products are lighter than equivalent conventional concrete channels, making installation and handling easier. Most components weigh less than 40 kg and can be carried easily.

#### ■ Durability and corrosion resistance

Polymer concrete is inherently resistant to a wide range of acids, alkalis, sulphates and detergents. It has an extremely low water absorption rate and is thus unaffected by repeated freeze-thaw cycles and road salts.

#### ■ Hydraulic efficiency

ACO DRAIN® channels are precision moulded with a built-in slope and an ultra smooth finish which encourages efficient hydraulic flow. (Mannings roughness coefficient 0.011). This ensures greater discharge rates than equivalent sized cast-in-place concrete drains.

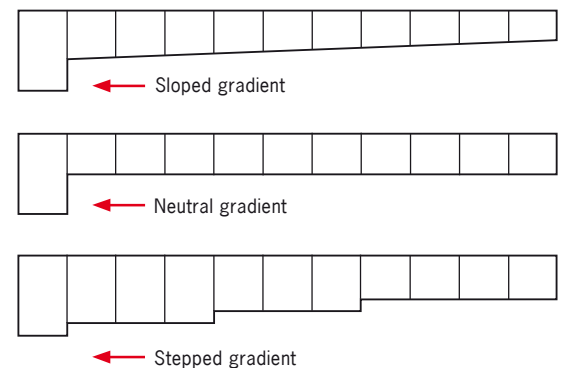


### DIN EN 1433 table of load classification\*

	<b>Class A 15<sup>1)</sup></b>	Traffic areas used exclusively by pedestrians and cyclists, and similar areas such as green spaces
	<b>Class B 125<sup>1)</sup></b>	Pavements, pedestrian areas and similar surfaces, car parks and parking decks
	<b>Class C 250<sup>1)</sup></b>	Kerb areas of streets and pavements
	<b>Class D 400<sup>1)</sup></b>	Road traffic lanes, also pedestrian precincts, car parks and similar paved traffic areas (e.g. freeway parking lots)
	<b>Class E 600<sup>1)</sup></b>	Non-public traffic areas subject to particularly high wheel loads, e.g. industrial traffic lanes
	<b>Class F 900<sup>1)</sup></b>	Special areas e.g. aircraft handling areas at civil and military airports

\* Traffic area classification for drainage channels, construction and testing regulations, conformity labelling and assessment.

<sup>1)</sup> Test force in kN



ACO DRAIN® trench drainage systems are suitable for all types of gradients from sloped to neutral and also allow the combination of different gradient types.

### ACO line drainage – all purpose system

#### ACO DRAIN® Multiline V 100 – 500



The new boltless Drainlock snap-on locking mechanism has anti-shunt lugs to prevent longitudinal movement, and enables the simple fixing and removal of grates.



*The technical trick is the V-profile.*

*ACO DRAIN® Multiline sets new standards with its channel cross-section. The range is also based on a new idea: a universal channel body can be used for every nominal width and type of edge-rail for load classes A 15 to E 600.*



#### Typical applications

- Car parks
- Railway platforms
- Architectural surfaces
- Pedestrian zones
- Landscaping
- Industrial surfaces

The channel system ACO DRAIN® Multiline:

- Nominal widths: 100, 150, 200, 300, 400 and 500
- Cast-iron, stainless steel and galvanised steel edge-rails
- For load classes A 15, B 125, C 250, D 400, E 600 EN 1433

## Line drainage of the future

### Technical superiority

The heart of the innovation is the V-profile. This new channel profile improves the drainage capacity and enhances the self-cleaning effect. The new side wall structure and the intelligent distribution of materials considerably increases the load-bearing strength and the overall stability. This results in simpler installation even though the system has an extremely high load-bearing capacity. The ACO DRAIN® Multiline universal system is available with all gradient types which can also be freely combined with one another.



The integrated edge-rails firmly cast-in with the polymer-concrete channel body provide reliable edge protection.

### Watertight

The complete tightness of the channel body right up to the top of the edge rails, and the very smooth surface, increase drainage volumes during extreme storms. The ACO safety rebate ensures that the channel body units are connected to one another with a 100 % watertight seal. The new cast-in lip labyrinth seal ensures that the drainage system can be connected with a watertight seal to the drainage pipe system. ACO DRAIN® Multiline easily complies with DIN EN 1433 specifications with a very large safety margin.



Complete watertightness right up to the top means 100 % compliance with the standards.

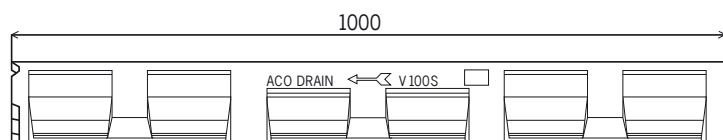
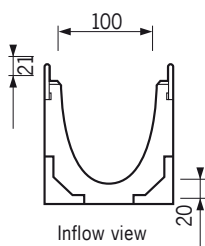
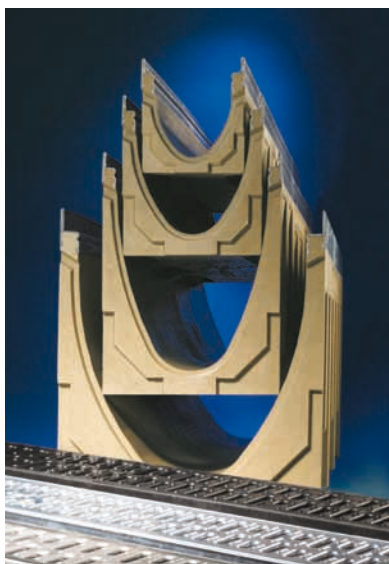
### Creative and versatile

The ACO DRAIN® Multiline V 100 – 500 system solutions have a clearly defined programme of gratings suitable for most architectural requirements in terms of aesthetics, functionality and load bearing strength.

The different gratings can be freely combined independent of the channel bodies and are available for all load classes from A 15 to E 600.



The ACO DRAIN® Multiline V 100 grate range: clear, flexible, creative.



Dimensions of V 100 channel bodies (V-profile with 100 mm nominal width). Available with cast iron, steel and stainless steel edge rails.



**ACO line drainage – heavy duty**  
**ACO DRAIN® S 100 K to S 300 K**



*ACO DRAIN® S 100 K to S 300 K systems are ACO's heavy duty solution – suitable for all load classes from A 15 to F 900 to EN 1433.*



**Typical applications**

- Line drainage on motorways
- Storage and filling yards
- Industrial surfaces
- Airports
- Container transhipment surfaces
- Petrol stations

## Stability under the highest loads

### Load resistance

The high strength of this heavy duty channel system is based on many details:

- Reinforcing ribs increase side wall strength and optimise load distribution.
- Special anchoring feet provide perfect stability in the concrete surround.
- Integrated anti-shunt lugs to prevent longitudinal grating movement, and low centre of gravity provides safety, even during installation.
- An abutting edge rail for paviors of 10 cm height avoids unnecessary seams.
- Smooth lateral walls are free of any protrusions, permitting easy abutment of surface coverings such as paviors, asphalt or concrete Powerlock boltless locking with stainless steel locking springs, replaces bolts for easier assembly and maintenance.

### Award winning design

This product was awarded a German product design (recognition) award for its excellent combination of form and function. A great design with many beneficial features:

- High load resistance
- High inflow profile
- Longitudinal bars preventing water by-pass
- Powerlock boltless locking
- Anti-shunt lugs to prevent longitudinal grate movement
- High quality coating to prevent corrosion
- Grate installation independent of channel direction.



In this example, the grates and edge rails were coated grey to match the colour of the paving stones.



ACO DRAIN® SK heavy duty channels are also available with bolted grates.



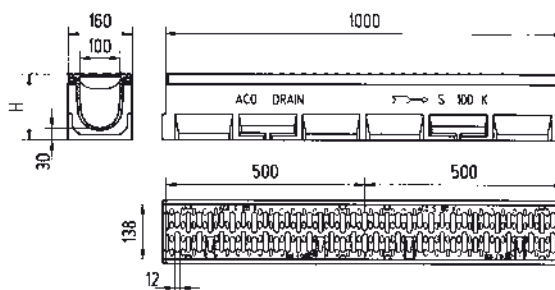
Powerlock boltless locking mechanism with stainless steel locking spring.



S 100 K channel. Appearance and functionality optimised by a new grating design.

### System overview

system	length	width	height
S 100 K	50/100 cm	16 cm	10,0 to 26,5 cm
S 150 K	50/100 cm	21 cm	22,0/27,0/32,0 cm
S 200 K	50/100 cm	26 cm	29,0/34,0/39,0 cm
S 300 K	50/100 cm	36 cm	40,0 cm



Dimensions of S 100 K channel body, 1.0 m.

**ACO line drainage – all-rounder**

**ACO DRAIN® Powerdrain**



*The ACO DRAIN® Powerdrain system is a real all-rounder. The product line boasts a convincing new scale of nominal widths, universal stability, functionality and design freedom, not to mention innovative noise damping.*



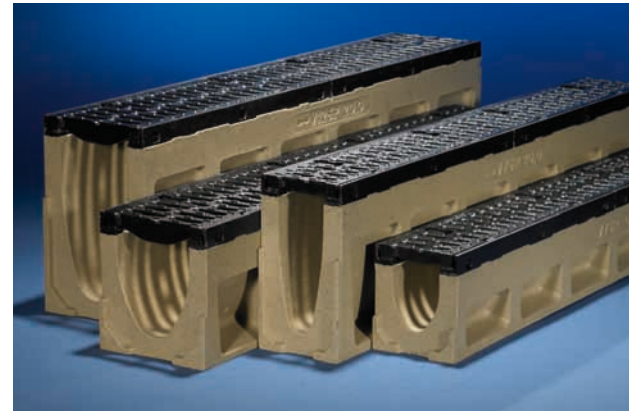
## Slim, quiet and extremely efficient

Slim solutions are not just good looking: the combination of crucial product properties make the ACO Powerdrain a real professional all-round solution in polymer concrete. Its compelling features include unusually good hydraulic specifications, extremely high safety, and outstanding stability right up to the toughest heavy duty class F. All of these product benefits are founded on four main properties:

- reduced nominal widths
- innovative V-channel profile
- rugged sidewall construction
- integrated damping

The nominal widths differ from traditional widths: the Powerdrain was developed with internal widths of 75, 125 and 175 mm. The design retains the hydraulically highly effective V-profile – an innovation launched by ACO for line drainage solutions – and is made of high-strength polymer concrete. This not only makes the new slim Powerdrain systems extremely tough, they also have efficiencies comparable to the previously standard 100, 150 and 200 channels.

The special elastomer damping between the grating and the channel, combined with the safely locked but still flexibly bedded grating, means permanent noise damping when vehicles drive over the channel.



ACO DRAIN® Powerdrain V 75 P, 20.0/0.0  
and V 125 P, 20.0/0.0



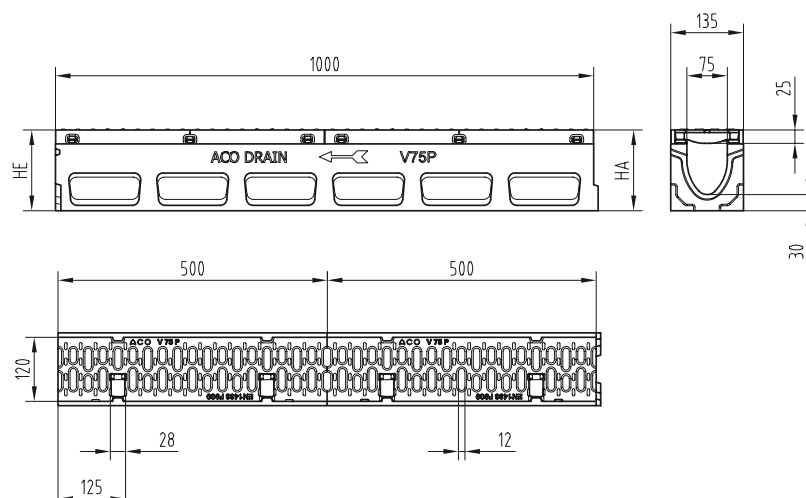
**slim:** V-profile for high hydraulic performance



**quiet:** the special elastomer damping means permanent noise damping



**efficient:** the boltless lock and tried-and-tested installation aids boost safety and efficiency at the construction site



### ACO line drainage – monocast ACO DRAIN® Monoblock



*ACO DRAIN® Monoblock is a one-piece polymer concrete drainage system developed as a solution for a range of surface draining applications from load classes C 250 to F 900.*



ACO DRAIN® Monoblock in anthracite black



ACO DRAIN® Monoblock system in:

- natural and anthracite black
- nominal widths 100, 200 and 300
- load classes C 250 to F 900

#### **Safety, stability and high functionality thanks to monocast construction**

The unique monocast construction guarantees extremely high levels of safety and stability in all transport surface drainage applications. The high inflow cross section and the V-profile ensure rapid surface drainage. A simple modular principle with only six system elements quickly and easily provides solutions for a whole range of applications.

#### **Easy installation and maintenance**

ACO DRAIN® Monoblock is a winner thanks to the simple and minimal use of system components. Bracing elements are not required.

The integrated safety rebate ensures that there are watertight seals between each unit as required by EN 1433 specifications. The channel is simply cleaned by flushing. The 0.5 m element with the removable grating gives free access to the whole drainage trench.

#### ■ **Polymer concrete makes Monoblock:**

- light
- age-resistant
- hochstabil
- rust-free
- frost, de-icing salt and chemical resistant



ACO DRAIN® Monoblock RD 100 – easy to install without lifting gear.



#### **Typical applications**

- Line drainage on motorways
- Line drainage in inner-city areas
- Drainage across traffic lanes
- Industrial surfaces
- Airports
- Container transshipment areas
- Motor racing tracks

## ACO line drainage – large capacity

### ACO Qmax – an advanced drainage system



*The ACO Qmax line drainage system was developed to satisfy demands for economical high-capacity drainage systems for large catchment areas. ACO Qmax has passed independent load tests to class F 900 in accordance with EN 1433.*

#### Qmax features

ACO Qmax was designed to handle high hydraulic capacities, enable minimum installation times, and be lightweight and yet rigid enough to withstand the rigours of typical construction site handling practice. Manufactured from tough, chemically resistant medium density polyethylene (MDPE), ACO Qmax is light, easy to handle and quick to install. Connecting to pipes is also made easy with the availability of a special side inlet unit.

The ACO Qmax system is a patented design currently available in four sizes for effective and economical drainage of a range of catchment sizes: ACO Qmax 225 can carry flows of around 25 l/s even when laid level (depending on channel length etc.). The largest ACO Qmax 900 can carry flows of around 300 l/s when laid level and considerably more when laid with a gradient.



#### Qmax flow regulator

The ACO Qmax system features the first genuine flow management and attenuation control as an integrated part of line drainage solutions. ACO Q-Brake has no loose or moving parts, is compact, and takes up no additional volume being situated within the channel. Its performance is completely laboratory certified.



ACO Qmax is available in different sizes and lengths providing an effective and economical drainage solution for the application requirement.

#### Typical applications

- Airport surfaces
- Distribution centres
- Highways
- Car parks

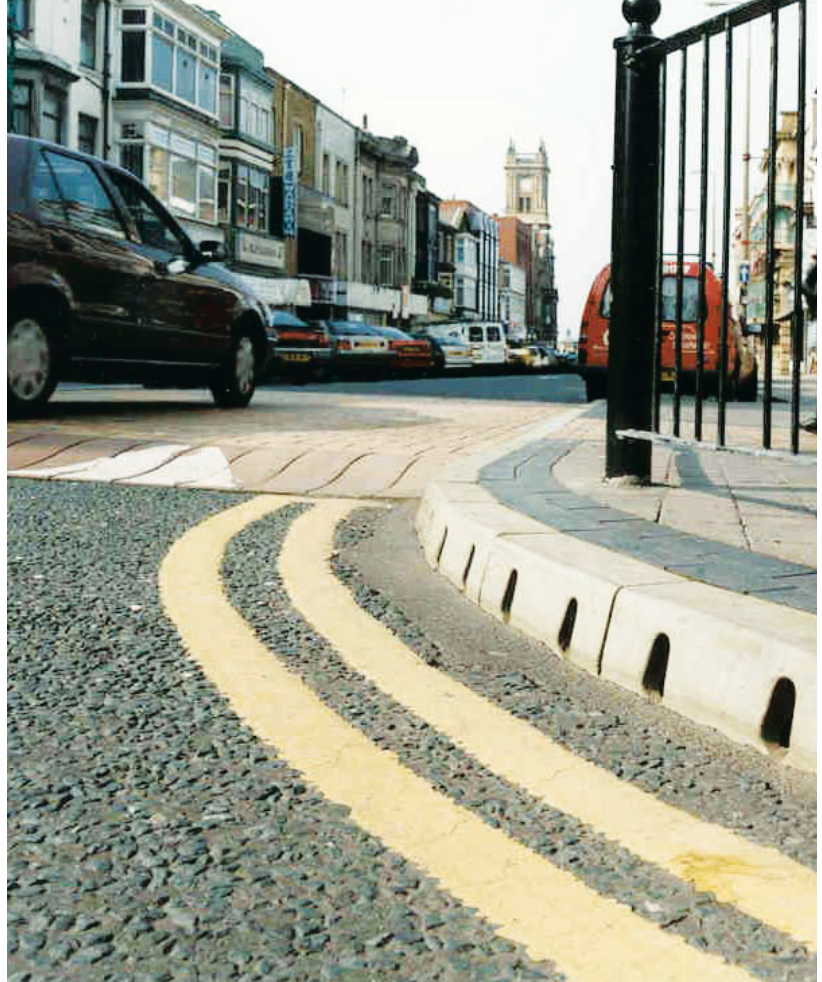




### ACO line drainage – Roadside drainage with ACO DRAIN® KerbDrain

*A new generation: kerbs with integrated line drainage.*

*KerbDrain stands for the brilliant concept of combining kerbstones with drains, to create one compact unit.*



ACO DRAIN® KerbDrain won The  
Queen's Award in 2001 for ACO  
Technologies PLC in England

## Two functions – one solution

### Versatile

ACO DRAIN® KerbDrain is an extremely versatile system that can be used wherever drainage is required for paved surfaces, such as car parks, bus stops and traffic calming zones.



ACO DRAIN® KerbDrain showing heights 480 mm and 305 mm

### Roundabout application

ACO DRAIN® KerbDrain is ideal for draining roundabouts. It makes it possible to optimally drain the traffic lanes in roundabouts towards the inside or the outside, up to load class D 400. In addition, KerbDrain can be extended to optimally connect up to existing drainage systems.

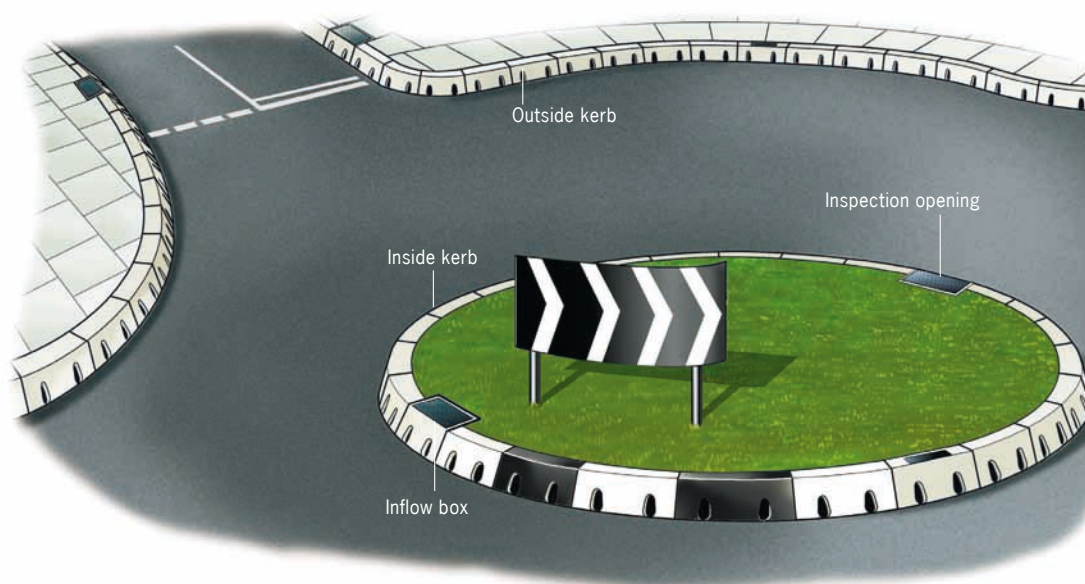
ACO DRAIN® KerbDrain is available in three heights: 480 mm, 305 mm and 255 mm.



ACO DRAIN® KerbDrain with cambered kerbstones for driveways



Kerbstone and drain in one, ACO DRAIN® KerbDrain



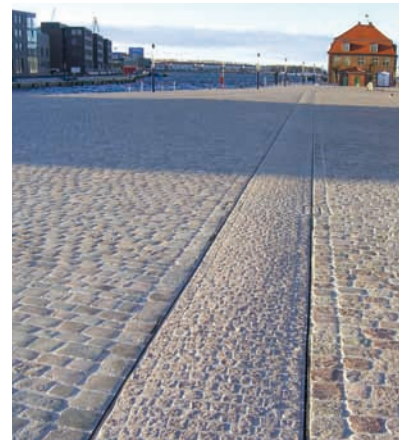


### ACO line drainage – architecturally attractive solutions



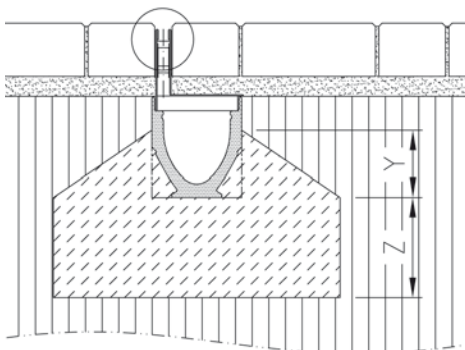
In harmony with all surface coverings.

*Discreet and inconspicuous, the V 100 S and V 150 S ACO DRAIN® Multiline slotted channel systems open up a new approach to designing open spaces. A narrow slot replaces the grating and forms a clean, unobtrusive line in the paving.*

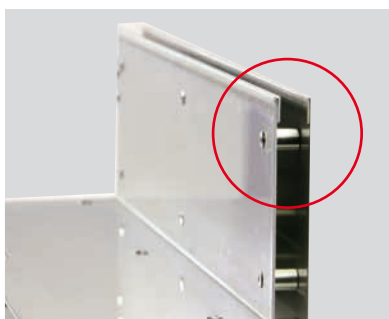


The slot can be offset in harmony with the architectural design of the surface.

20  
III



Installation example.



### ACO DRAIN® slotted channel system Multiline

#### Designing with clear lines

The system is also ideal for transitions between two different surfaces. The slotted frame consisting of galvanised steel or stainless steel is compatible with all standard paviors or stone slabs and joins the two surfaces almost seamlessly.

This system is superb for the drainage of façades and optically sophisticated surfaces.

#### Functionality and maintenance

Simple cleaning and maintenance with low or high pressure washers. Access openings simplify maintenance of the subsurface polymer concrete channels with their excellent hydraulic performance.

#### Typical applications

- Piazzas
- Paths
- Facades



Slotted channel V 100 S, 1,0 m.



Sump basin, 0,5 m.

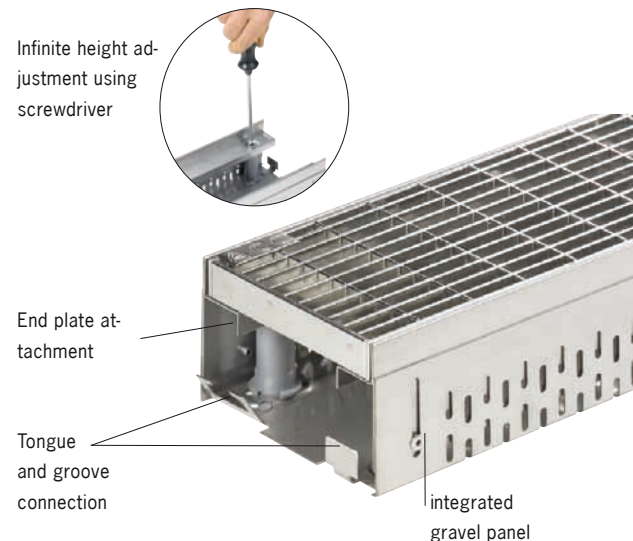




ACO Profiline – flexible heights, timeless design and optimal drainage.

#### ACO Profiline channel unit, adjustable height.

*ACO Profiline is a complete channel drainage system for draining vertical façades, as well as terraces, balconies, flat roofs, green roofs and roof gardens – the perfect solution for sophisticated function and design projects.*



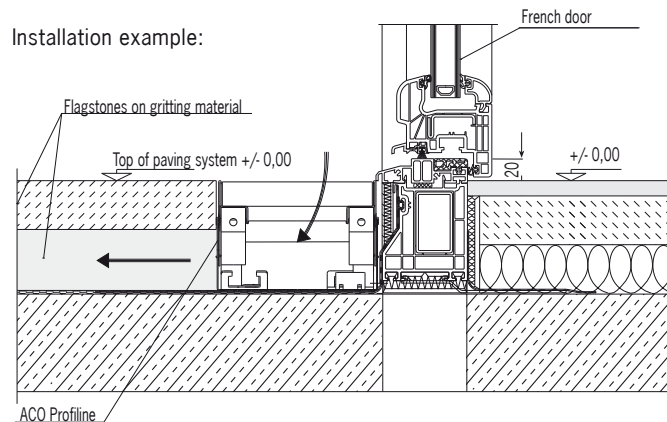
## ACO Profiline

### Planning and design with no limitations

The ACO Profiline channel system is a reliable professional solution for the drainage of façades, terraces and balconies. It is available in fixed heights of 5.0 and 7.5 cm, as well as in continuously adjustable versions between 6 to 16.5 cm. Customised versions can also be supplied upon request.

The advantages for planners and designers: ACO Profiline enables the connection height to building seals to be reduced from 15 cm to 5 cm. The channel system works on two levels: it drains the water from the surface as well as water from the underlying drainage layer. Water flowing down façades is also reliably collected and removed. Backflow reservoirs prevent the build-up of water puddles during sudden downpours. ACO Profiline is available in galvanised steel and stainless steel versions and therefore perfectly harmonises with visually sophisticated settings.

#### Installation example:



#### Typical applications

- Façades
- Terraces
- Balconies
- Flat roofs
- Green roofs
- Roof gardens

## ACO line drainage – architecturally attractive solutions

### ACO DRAIN® Lightline, ACO DRAIN® Lightpoint and ACO Eyeleds



*ACO DRAIN® Lightlin, ACO*

*DRAIN® Lightpoint and ACO Eyeleds provide highlights in architectural and open space designs. Public areas, entrance halls and paths become more attractive and more function-ally designed.*

*Technical perfection and individual design flexibility provide planners and builders with a wealth of versatile applications.*

Innovation award  
Architecture and Technology.

22  
III

Innovationspreis  
Architektur und Technik

Launched with huge success at the 2004 light+building exhibition, INSTA Elektro GmbH presented the new ACO DRAIN® Lightline, which was nominated for the Architecture and Technology award and presented with a special recognition award in the lighting category.

#### Typical applications

- Piazzas
- Paths
- Entrance halls







Trend-setting lighting and aesthetics in perfect harmony: ACO DRAIN® Lightline for customised use. Car-proof.



## Lighting instead of drainage – ACO DRAIN® Lightline

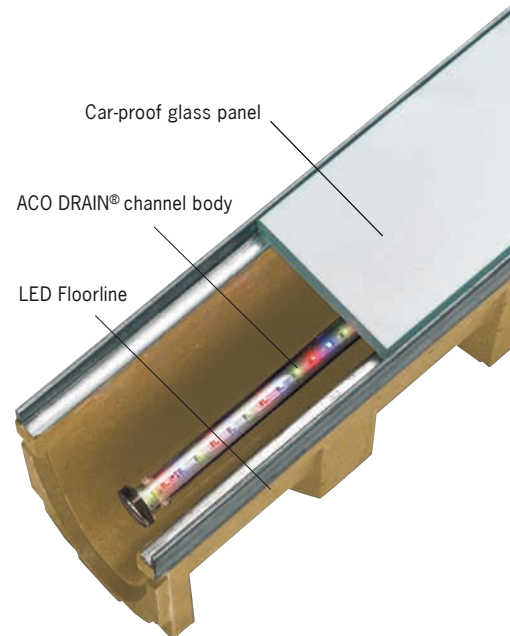
The new ACO DRAIN® Lightline with its variable colour effects provides planners with numerous application possibilities in the colour design of open spaces. ACO DRAIN® Multiline channels in combination with LED Floorline and car-proof non-slip glass technology merge perfectly to create an architectural lighting design element.

LED Floorline is available in the standard colours white, blue and green. Other technologies are available for lighting

with customised colours and for creating colour effects and sequences.

The ACO DRAIN® Lightline cover panel consists of a safety-glass cover which is non-slip and car-proof, and securely enclosed in a stainless steel frame.

A special fastening technique was developed to lock the channel unit and the cover panel together to protect the units against vandalism, and to simplify installation.



## Lighting and drainage – ACO DRAIN® Lightpoint



The LED Lightpoint is available in various colours (e.g. white, blue). 18 lightpoints can be run from a modular plug-in power supply unit. The lightpoints are interconnected by a simple plug arrangement. The LED Lightpoint is simply inserted into the special opening in the castiron grate and fixed into place to retain the drainage function of the grate and the channel.

The lightpoint is another way of highlighting the line drainage system. Vehicle-proof to class D 400.



## Innovation 2008: ACO Eyeleds

Light and expressive – in the class B 125 system, the LED points are installed in a high-strength composite grating. The LED technology creates a powerful lighting effect even though the lights are only approx. 2 cm in diameter. Garage drives, squares, footpaths, pedestrian zones, access routes, boulevards and

railway platforms can all be attractively highlighted by ACO Eyeleds. In addition to decorative effects, orientational lighting, markings, and special accents, ACO Eyeleds – which were jointly developed by ACO and Lighting Partner – can also improve overall safety in busy areas.



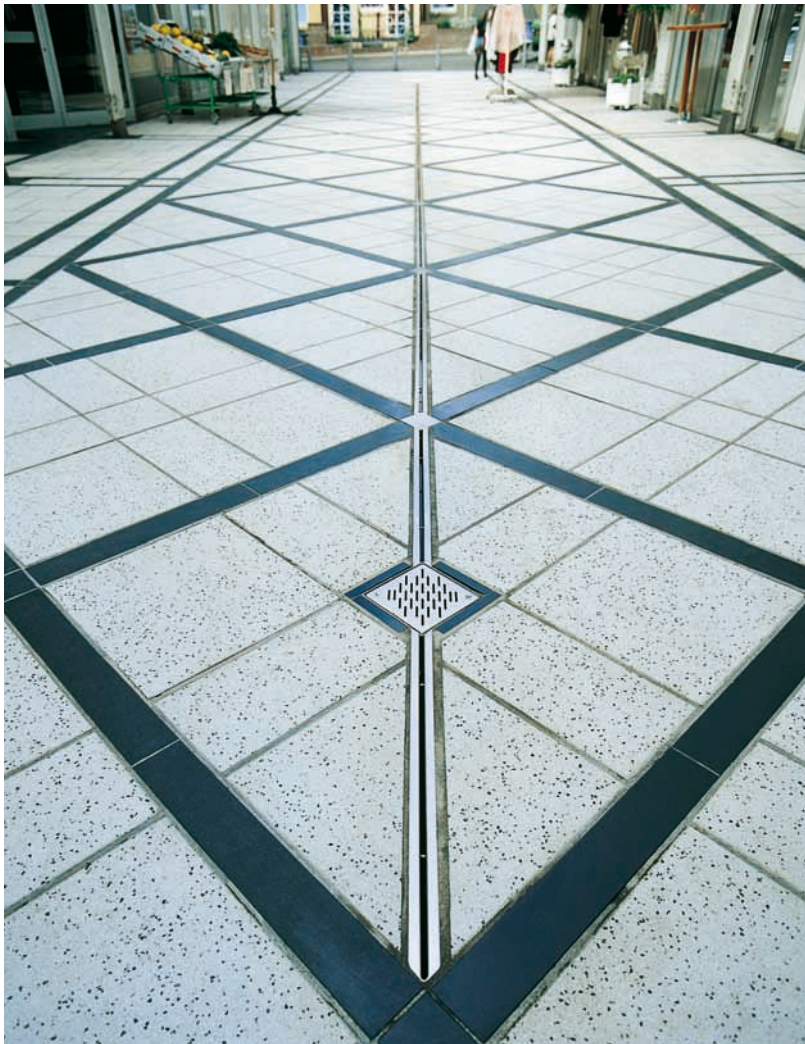
ACO Eyeleds can be combined with either ACO's polymer concrete Multiline system, or plastic channels

### ACO individual solutions in stainless steel – accents for good architecture



ACO channel grates and covers in stainless steel support customised design down to the finest detail.

*In addition to perfect function, another key feature of ACO brand policy is the high aesthetic quality of its products. This gives rise to added value which is appreciated just as much by our customers as the professionals because many ACO products have already won awards for their innovative design.*



#### Typical applications

- Piazzas
- Façades
- Pedestrian areas
- Arcades and passages

Sophisticated optical solutions for passages and arcades.



## Customised for sophisticated planning



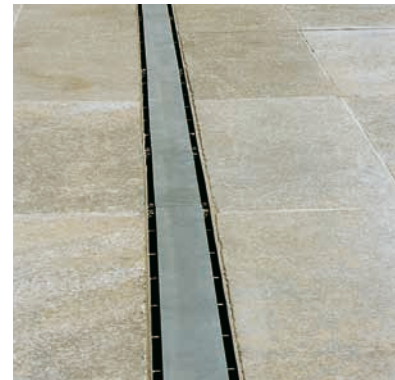
Channel drains in stainless steel combined with a wide range of different grating types, provide design accents as well as safely draining away water from façades and paved surfaces.

### Form and function

Chrome-nickel steel combines durability and beauty: form and function in perfect harmony. All of the components are durable, tough, non-deformable, corrosion-resistant and long-lived.

### Design

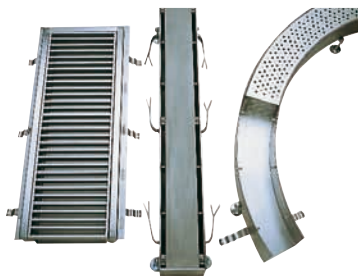
The broad spectrum of finishes and shapes gives you complete freedom with your designs. Even unusual concepts can be easily realised using stainless steel. Customers' individual project designs can be supported by our expert team with tailor-made services for your specific project with full proposal information, CAD layout drawings and assembly instructions.



Compact heavy-duty construction in stainless steel.



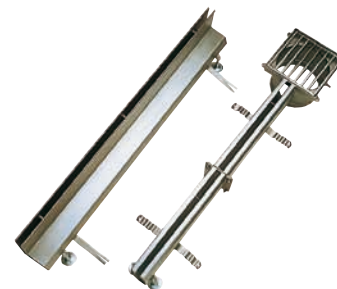
Compact channels.



Channel drain variations.



Slotted channels for abutting paving stones are harmoniously integrated into the overall floor surface. These can be custom manufactured, individually with or without an integrated gradient, in straight, radial or polygonal designs.



Slotted channels.

### ACO plastic channels – domestic and economical solutions



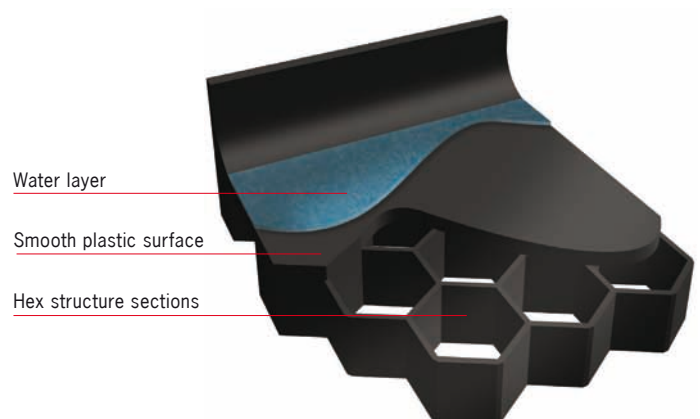
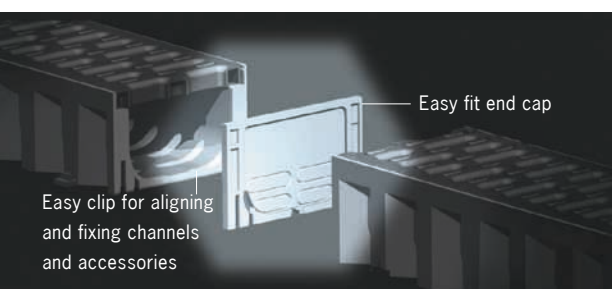
*The new ACO Hexdrain plastic channel is ACO's answer to the demand for inexpensive but effective surface drainage systems. The Hexdrain channel system was specially developed for the safe and attractive drainage of patios, drives, and other paved surfaces.*

#### Typical applications

- Garages
- Patios
- Drives
- Pedestrian areas

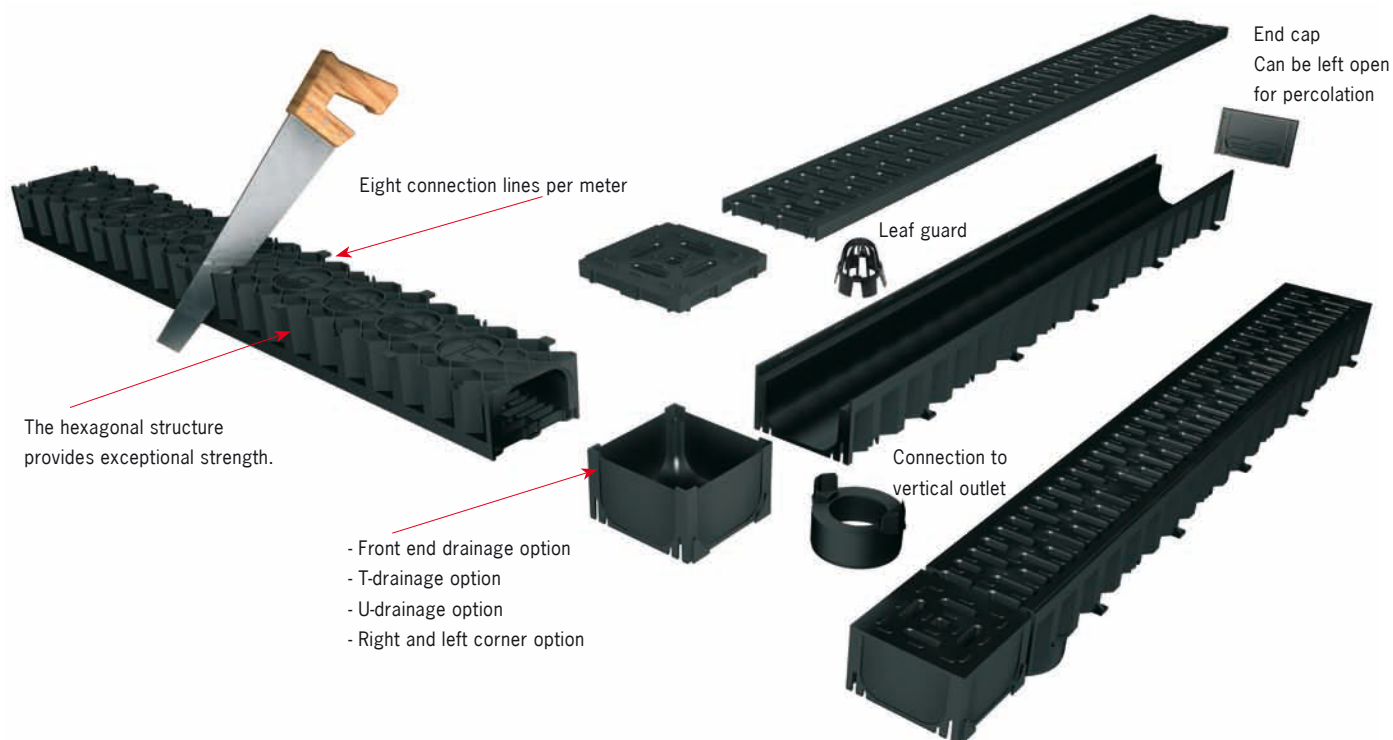
26  
■■■

#### The unique benefits of the Hexdrain



**The hexagonal structure provides exceptional strength and rigidity whilst keeping weight to a minimum. The hexagonal shapes are also utilised to provide simple positive connections for accessories.**





### Plastic – the alternative to polymer concrete

These channels are

- lightweight
- rugged
- unbreakable

thanks to the use of recyclable plastic and an innovative production method.

The honeycomb shape of the sidewalls makes the channels exceptionally tough. So strong, they don't need to be bedded in concrete. The surface covering can directly abut the channels for a clean finish.



Instruction manual on the bottom of the channel

### Benefits

- Available in metallic grey or black
- Easy-to-install flexible system
- Simple to cut with a saw
- Multi-option corner unit
- Installation instructions on the product itself
- perforated end cap
- Car-proof, class A 15
- EN 1433



1 m grating in metallic grey and black.  
Also available in galvanised steel (on top).

### ACO XtraDrain composite channels for professional solutions



*Easy handling right down to the last detail, combined with the highest quality: the new ACO composite drainage channel. Designed with premium composite and capable of withstanding loads to class C 250. A great new drainage channel, especially for applications involving the design of open spaces, and gardening and landscaping – which all benefit from this technically perfect and aesthetic solution for line drainage.*

#### **ACO composite channel**

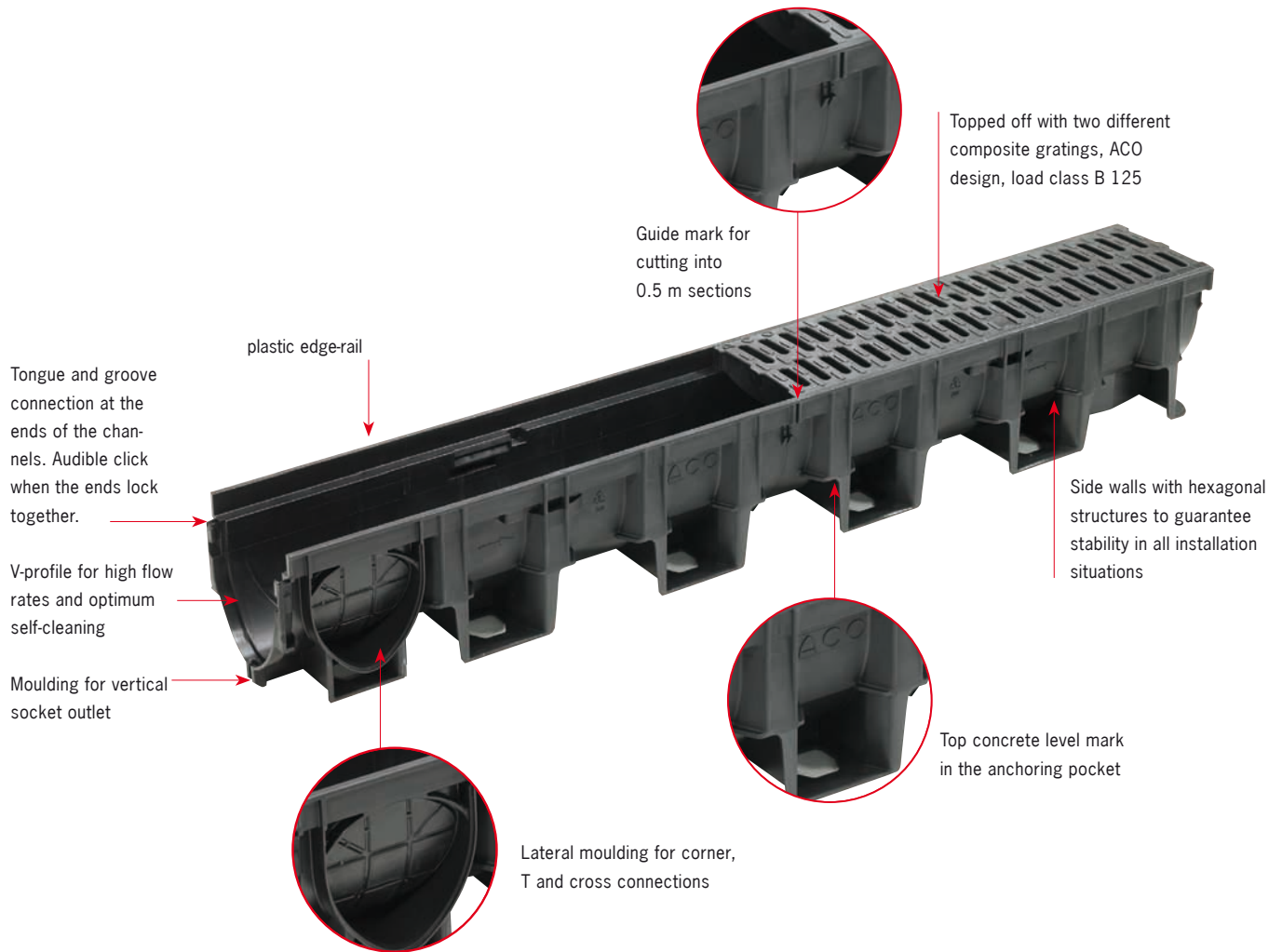
Manufactured from recycled polypropylene, the high quality, high strength unit is available in three channel widths; 100 mm, 150 mm and 200 mm. As standard channels are manufactured with galvanised steel or composite edge rails - which provide optimum channel protection from vehicular traffic.

It is possible to choose from a range of traditional and discreet slot drainage gratings and solid covers to ensure that a wide variety of applications are cate-

red for. The system's gratings are fitted with ACO Drainlock, a bar-less locking device which reduces the risk of blockages and improves hydraulic capacity.

ACO XtraDrain system also has a range of Brickslot gratings to complement installations which require a discreet drainage system. ACO Brickslot gratings are available in galvanised or stainless steel and are suitable for use with the 100 mm and 150 mm wide channels in the ACO XtraDrain range.





### Typical applications

Footpaths, pedestrian areas

- Pedestrian precincts
- Public and private car parking spaces
- Open spaces around business premises such as banks, insurance companies, hospitals
- Housing areas/estates
- Schools
- Railway station entrances
- Façade drainage
- Railway platforms





### ACO point drainage – removing water is a point not to be missed



*ACO point drainage systems are ideal for surfaces which require point drainage for structural or topographical reasons.*



#### ACO DRAIN® point drains

Yard drain made of polymer concrete, topside cast iron frame, inset cast iron grid and Point-lock boltless locking system for load classes up to B 125.

#### Typical applications

- Roads, paths, piazzas
- Car parks
- Railway platforms
- School yards
- Industrial areas
- Airports

#### ACO road gully Combipoint

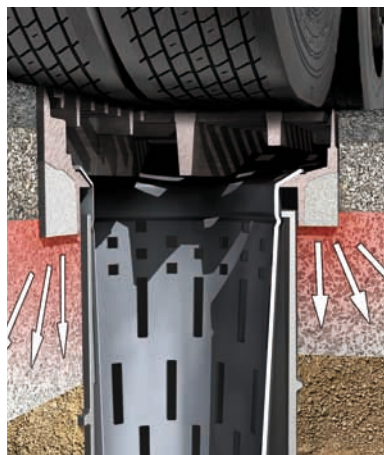
ACO road gully Combipoint protects the mortar joints from damages by traffic load, sinking of gully grating and cracking of surfaces.

#### Typical applications

- Kerbs
- Traffic lanes
- Car parks and industrial surfaces
- School yards
- Pedestrian zones

#### Benefits

- no direct load transfer in the gully unit
- one-piece, permanently sealed gully
- no mortar joints
- reduction in construction costs
- simpler and easier installation
- no repair costs

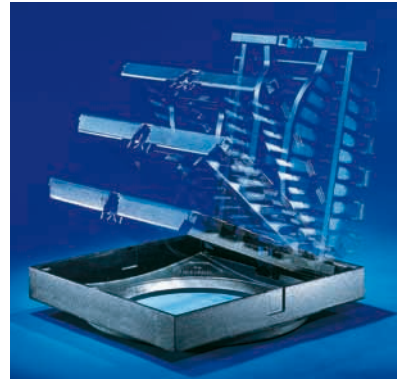




The riser units Multitop are available with a channel or flat profile. Available in two universally applicable dimensions.  
300 x 500 channel shape and flat shape.  
500 x 500 channel shape and flat shape.  
In accordance with EN 124/DIN 1229.  
The riser units match all discharge combinations in accordance with DIN 4052.

## ACO riser units Multitop

The new riser unit designs for class C 250 to D 400 Multitop storm water discharges feature long service lives, easy handling and simple maintenance. The frames and grates are made of cast-iron. The most important detail is the unbreakable maintenance-free double hinge which allows the grid to be folded out to around 115 degrees on either side or completely removed. 4-point vibration absorption integrated within the frame reduces rattling noises. Other features include the low weight of the grate and the easy to operate grate securing system using a boltless non-corroding spring lock for the first time. Because the system is self-locking, there is no danger of vandalism.



### Typical applications

- Kerbs
- Traffic lanes
- Car parks and industrial surfaces
- School yards
- Pedestrian zones

## ACO Bridge discharge systems

High specifications are laid down for bridge drainage systems because of the greater risks to traffic and the need to protect expensive infrastructure. Bridge drainage systems also have to match the special features of bridge construction such as reinforced concrete bridges, and special construction measures such as timed shifting when constructing large steel bridges. ACO bridge discharge systems fulfil these requirements:

- They comply with class D 400 in accordance with EN 124
- The grate is firmly fixed into the frame with a hinge
- The grates are locked or bolted to prevent unauthorised opening



Bridge discharge for gravel bridges.



Bridge discharge for steel bridges.



Bridge discharge for reinforced concrete bridges, HSD-5.



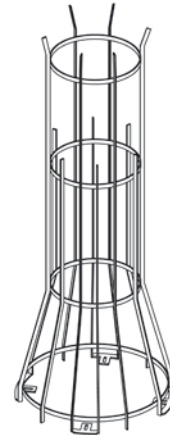
## ACO tree grate systems – offering optimum protection to street trees



*Healthy vegetation and great optical appearance: Both aspects may be achieved with the ACO tree protection systems. Tree grates and tree protective cages equally ensure trees retain their living space even in densely populated urban centers.*



The WOTAN tree grate permits additional fastening of poles or tree trunk protection frames.



Matching tree protective cages made from galvanized steel in various colors, heights and designs are available; illustrated is a height of 182 cm.

### WOTAN System

The WOTAN System, proven for many years, offers flexibility in form and size. The WOTAN requires no substructure. The base module consists of a partial grate, 6 cm in height, is manufactured from maintenance-free ductile cast-iron. Individual modules are connected together using a theft-proof toggle lock to provide a load bearing surface.

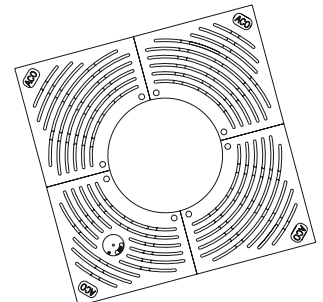
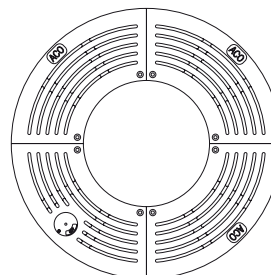
### Standard System

The ACO Tree Grate Standard System consists of round and square tree grates of 125 – 300 cm size. Radial and ray designs offer additional design options. Up to a size of 200 cm, the standard ACO Tree Grate consists of four individual units. One unit is provided with a watering hole cover. All versions are available for non-braking tire loads of 15 kN up to 50 kN.

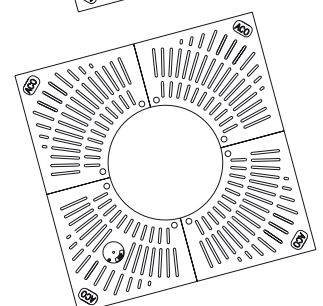
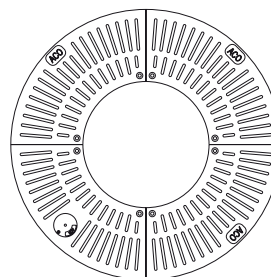
### Typical applications

- street trees
- trees in urban areas

Radial design



Ray design





## ACO grass grid – pro nature

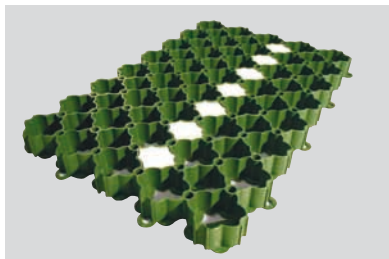
*Green areas represent an absolutely vital part of our existence. The sealing off of occasional use traffic areas cut off this livable space.*



Park use of grass grid



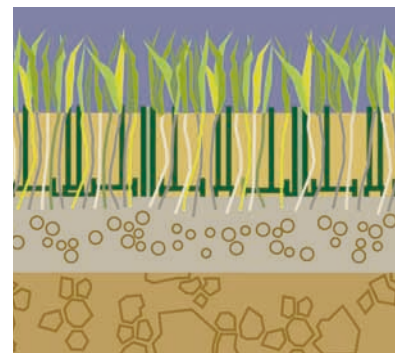
Parking space reinforced with grass grid



ACO grass grid

ACO grass grid is made from plastic, provides unsealing of parking lots, yard driveways, terraces, walkways, storage spaces, emergency routes and river bank reinforcements. These areas will remain green, yet are still load-bearing. Through the use of recycled materials, ACO promotes the environmental issue. When sealed surfaces are required to aid area seepage, the

The continual building of towns and construction of paved areas means less and less natural ground drainage. To cope with this, we require bigger and more expensive water treatment systems to deal with the water collected in sewers. Therefore, there is an increasing necessity for large-scale seepage of rainwater back into the ground. Many industrial nations have listened and are attempting to counteract the sealing off of surfaces through building restrictions and regulations for sealed surfaces.



ACO grass grid used as large-scale reinforcement of fire rescue access route.

surface drainage systems such as ACO Self® or ACO DRAIN® can be used. ACO grass grid is lightweight, thus easily transported, and for installation they snap together. While regionally varying, many building regulations require a certain amount of “green” area. Using grass grid allows vehicular use of these areas.

### Typical applications

- parking spaces
- domestic driveways



In 2003, ACO grass grid received an award for “Novelty Product” during the English Industry Exposition GLEE.



### ACO access and manhole covers – multiple and recessed covers for shafts and supply ducts

*ACO has a wide spectrum of high-precision access covers and riser units for all load classes and for the complete range of shaft and sewage structures. The single and series covers use high quality technology to lengthen service lives and reduce operating costs.*



SERVOKAT access covers for emergency exits.

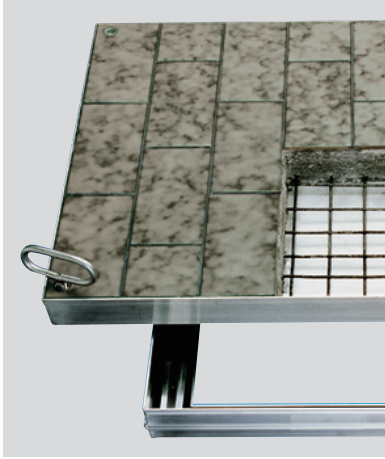


#### Typical applications

- Telecommunication installations
- Airports and ports
- Railway stations
- Tunnels
- Bridges
- Emergency exits
- Water and gas supplies
- Control shafts
- Water treatment and sewage works

SERVOKAT access covers in stainless steel and galvanised steel. For load classes B 125 and D 400. Standard sizes 600 x 600 up to 1500 x 1500. Other sizes upon request.

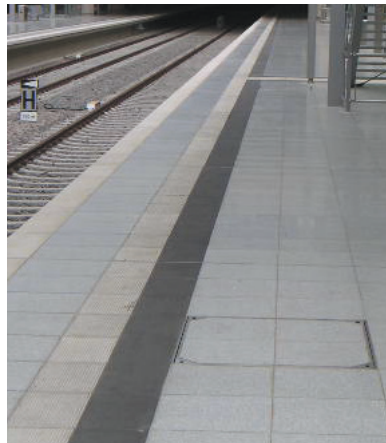




Recessed-access covers in stainless steel. Also available in galvanised steel and aluminium. Suitable for indoors and outdoors. Standard dimensions 300x300 to 1000x1000. Other sizes upon request.

The **recessed access covers** for customised surfaces can be ideally adapted to the local surface covering by inserting the paving required into the lid of the access cover. The cover can be filled with conventional paving and surfacing materials (tiles, flagstones, granite, marble, laminated wood, carpets or other materials).

The **SECANT access covers** available in various lengths and are a very flexible access cover system because the design and the materials open up an enormous range of applications.



SECANT access covers in variable sizes with choice of surfaces. For load classes B 125, D 400 to F 900. Also available as covers filled with concrete and iron.

The **SERVOKAT access covers** with easy opening features are the ideal solution for access shafts which are frequently opened for maintenance and inspection purposes. High quality is guaranteed by the ability to integrate the access cover in a wide range of paved surfaces. SERVOKAT access covers comply with all safety regulations.

**TRIGONA** – the new cable shaft cover with triangular trap doors. Optimum design, innovative technology and efficient material selection guarantee easy opening and closing of the individually removable trap doors which are rattle-free thanks to the triple-point supporting frame. The weight of each individual door is reduced to less than 25 kg – TRIGONA can therefore be operated by one person without any additional lifting gear. The self-locking door cannot close accidentally. The safety lock and self-cleaning hinges are made of ductile cast iron to prevent stress corrosion or contact corrosion.

#### Manhole covers – ductile iron

The brand new concept for manhole covers: Multitop class D 400 in accordance with EN 124. The focus of the new technical concept is safety, weight and maintenance-friendliness. All are incorporated in the new manhole covers developed by ACO.

- Operation simplified by reducing the cover weight by more than 50%.
- The cover-lock is traffic-safe and maintenance-free to optimise safety and handling.
- With two covers and four different frames, the Multitop manhole cover programme is suitable for more than 90% of all applications.



Maintenance-free, boltless, traffic-proof lock made of heavy-duty wear-and-tear resistant plastic in accordance with EN 124.



- System Bituplan, cast-iron frames, round, cast-iron covers with/without ventilation openings
- BEGU frames, round, cast-iron covers, with/without ventilation openings
- Cast-iron frames, round, cast-iron covers, with/without ventilation openings
- BEGU frames, rectangular, cast-iron cover, with/without ventilation openings





## **ACO SPORT drainage systems – for running tracks and sport facilities**



ACO SPORT elements in Athens. ACO has provided drainage systems for all the Olympic stadiums since the Olympic Games in Munich 1972, with the exception of Moscow.

*ACO SPORT includes drainage systems and construction elements for sports and recreational facilities, helping them to remain in good playing condition throughout the year.*



ACO SPORT system 1500 with slotted channel LW 125 used as drainage system for running tracks.



ACO SPORT system elements for hockey pitches.



ACO SPORT slotted channel LW 125 can be coated on site with ET track cover, no abutment rail.



ACO SPORT slotted channel LW 125, with aluminium edge-rail design.



ACO SPORT slotted channel LW 125, curved 1 m, with cover, suitable for abutment on two sides by synthetic surface.



ACO SPORT drainage system 1500 for running tracks



ACO SPORT artificial turf drainage system 6000.

## Safety is the goal at every level

The ACO SPORT 1500 drainage system safely drains water away from running tracks and pitches for type A – D sports arenas.

ACO SPORT LW 125 slotted channels are the preferred solution for draining running tracks where a seamless transition between track and playing field is required.

The installation of slotted channels instead of grated channel systems permits the use of playing fields for a variety of sports without the limitations associated with a permanent raised edge.

The channel system is manufactured from polymer concrete, a material characterised by extreme durability and stability to guarantee long service lives. Quartz-type fillers and polymer resins render this material watertight – an ideal environmentally compatible material with superb properties.

ACO SPORT system 1500 is manufactured in compliance with DIN 18035 Part 3 and IAAF regulations. It also complies with FIFA regulations for football pitch drainage. This channel system has the following special features:

- Smooth interior surface enabling high flow velocities and capacity.
- High self-cleansing effect
- Wide channel width at the base for secure placement in poured concrete foundations
- Coatable with 13 mm synthetic track covering
- Standard radius  $r = 36.5 \text{ m}$
- Low weight and easy installation
- Installation assisted by directional arrow markings
- Braced drainage slot prevents compression during installation
- Installation alignment assisted by tongue and groove system at channel ends
- Suitable for wheelchair use

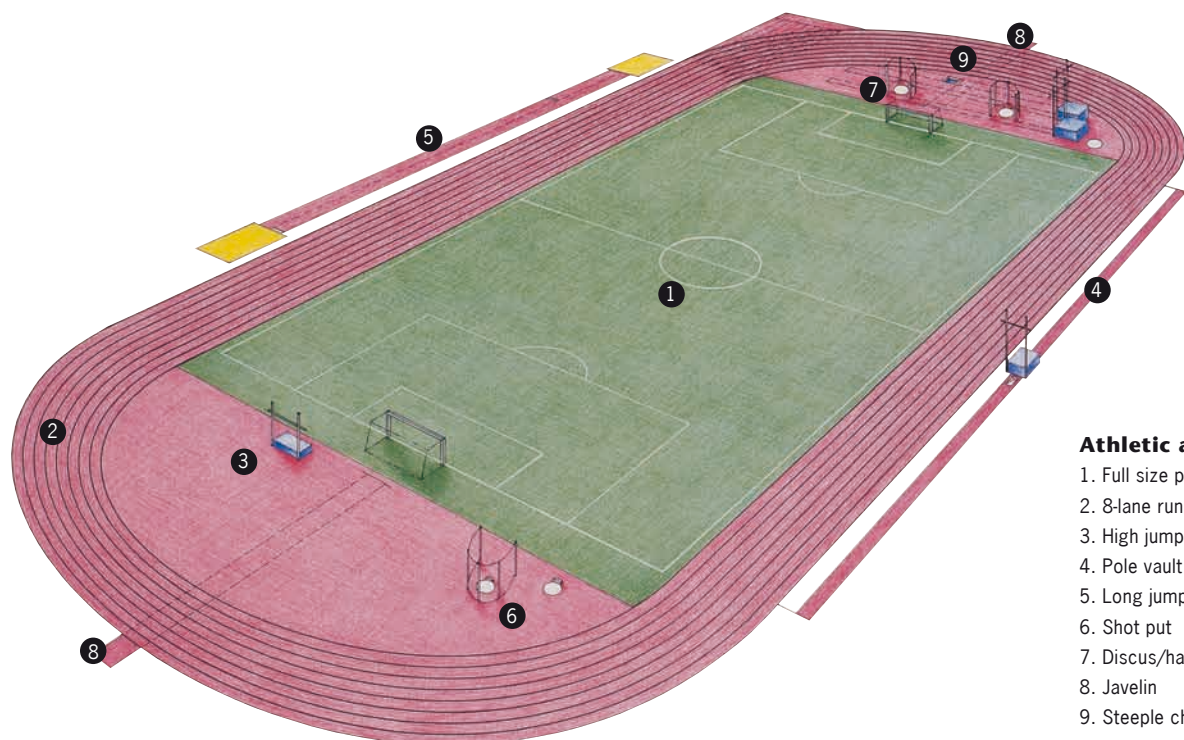


ACO DRAIN® drainage system for spectator stands.



## ACO SPORT construction elements and accessories

*Construction elements used in playing fields for track and field sports must be clearly defined and functional to ensure that sports can be conducted safely and to simplify maintenance and operating costs. ACO SPORT includes edging and construction elements or functional sports field operation.*



### Athletic arena type

1. Full size pitch
2. 8-lane running track
3. High jump
4. Pole vault
5. Long jump/triple jump
6. Shot put
7. Discus/hammer
8. Javelin
9. Steeple chase water jump

ACO SPORT elastic perimeter kerbs safely enclose the running track, the pitch, long jump pit and the shot put area.



ACO SPORT elastic perimeter kerbs





ACO SPORT system 8400  
Distribution shafts for electrical and communications equipment, fixtures, measuring equipment and water supplies.

## Top performance in all safety aspects

Perimeter systems for playing fields, running tracks, jumping pits, throwing and shot put facilities, roller sports and boccia pitches, as well as construction elements for pole vault and steeple chase are as much a part of the system as the supply shafts. Every new sports arena raises new challenges for planners. Planners have to take local conditions into consideration as well as the wishes and needs of the owners, clubs and users.

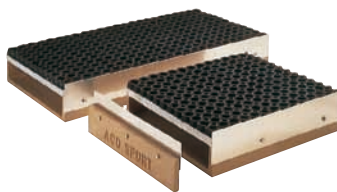
ACO Service provides free solution recommendations for its sports field systems – right from the start of the planning process. Even during the preparatory phase for the construction documentation, ACO provides precise CAD layouts, parts lists, installation recommendations and tender proposals to assist in precise cost determination.



ACO SPORT sand trap channels enclosing the long jump pit.



ACO SPORT system 7000  
Sand trap channels and elastic perimeter kerbs enclosing the long jump pit. They hold back the sand and keep the running track clean.



ACO SPORT sand trap channels with edge-rails.



ACO SPORT system 8100 steeple chase water jump with hurdle.

### ACO gravity and siphonic roof drainage



*Flat-roof gullies are installed to drain rain water from roofs, car park decks and terraces. The collected rainwater is drained off via internal drain pipes.*



ACO roof gullies SPIN in cast iron

### ACO SPIN – Gravity roof drainage in cast iron and stainless steel

Gullies with pressed sealing flanges but without foul-air traps are used for the efficient drainage of roofs.

ACO's modular system for this purpose consists of gullies with nominal widths of DN 70, DN 100, DN 125 and DN 150, in one-part or two-part models, plus accessories.

With the exception of the optional components for green roofs, the components are manufactured from grey iron to EN 1561.

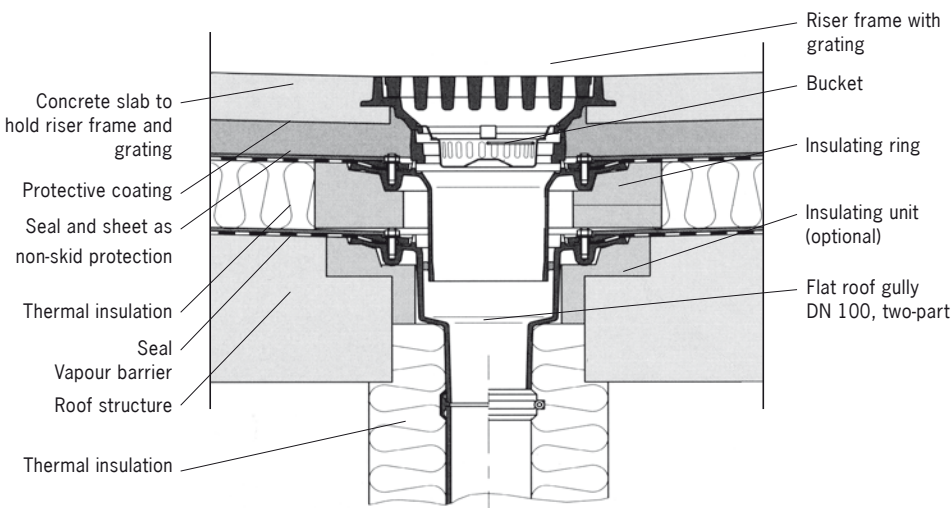
#### Product benefits

- Variable modular system suitable for different roof constructions
- Heatable flat-roof gullies
- Gully body with pressed sealing flange for connection to different types of sealing membrane
- Non-flammable housing
- Good connection between concrete and cast-iron



ACO roof gully SPIN in stainless steel

40  
III



Installation example: park deck, thermally insulated, with 2-part flat roof gully DN 100

#### Typical applications

- Flat Roofs
- Terraces
- Hospitals
- Shops
- Car park deck drainage
- Green roof drainage



## ACO JET – Siphonic roof drainage

### in stainless steel and cast iron

Safe, rugged and high capacity are the trademarks of JET roof gullies in cast-iron and stainless steel for the siphonic drainage of large roofs, e.g. shopping centres, industrial warehouses or offices.

#### Typical applications

Large roofs such as:

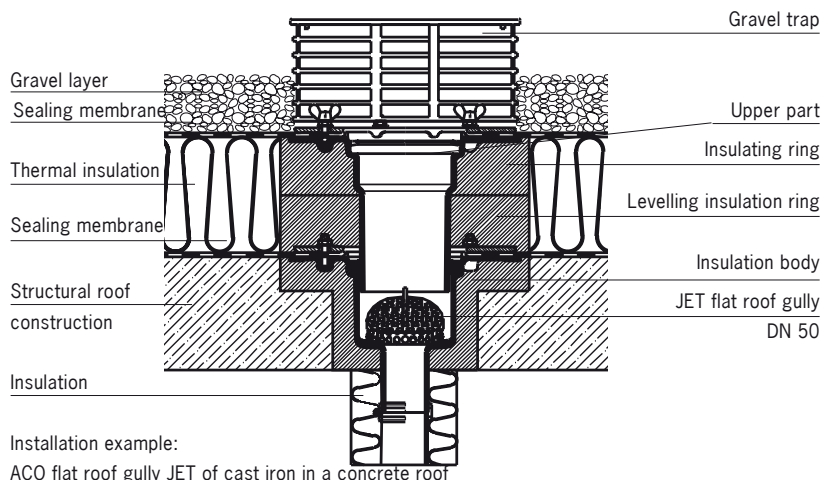
- Shopping centres
- Industrial warehouses
- Football stadiums
- Office and administration buildings

#### Product benefits

- Massive pressed sealing flange connections to interface up with the sealing membranes
- Good connection between concrete and metallic gully body
- Weather resistant and UV-proof
- Resistant to damage during construction
- Non-flammable
- High discharge capacity: DN 50 approx. 9 l/s, and DN 80 approx. 17 l/s



ACO flat roof gully JET of cast iron for siphonic drainage from DN 50 to DN 80.



ACO flat-roof gully JET in stainless steel  
In nominal widths DN 40 to DN 100

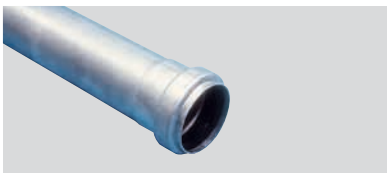




## ACO pipe work systems and balcony drains of stainless steel and galvanised steel

*The functional strength and service lives of sewage pipes are being increasingly challenged by the rising level of technology in homes, the growing demands for more housing and sanitation comfort, and the presence of aggressive media in domestic wastewater. ACO rises to this challenge with a complete programme of pipes, fittings and gullies in stainless steel and galvanised steel.*

### Stainless steel pipe system



#### ACO stainless steel pipes and fittings

Available in sizes 50 mm, 75 mm, 110 mm and 160 mm external diameters, with pipes supplied in standard lengths 0.15 m, 0.25 m, 0.5 m, 0.75 m, 1 m, 1.5 m, 2 m and 3 m for optimum practicality and easy assembling. Pipe lengths up to 6 m can also be easily supplied in line with specific customer applications.

Manufactured from grade 304 austenitic stainless steel as standard, ACO stainless steel pipe is ideal for most liquids including soil, wastewater, process water and rain water. Grade 316 stainless steel pipes and fittings are optionally available for particularly aggressive industrial drainage applications. The range is completely compatible with ACO stainless steel floor gullies, channel systems and rainwater drainage products.



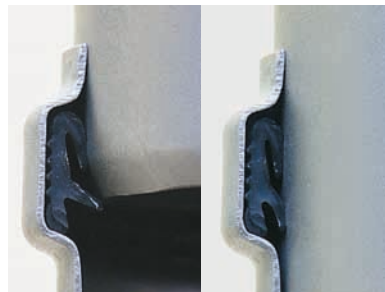
#### Benefits

ACO PIPE stainless steel pipes save on installation costs and long-term care and maintenance

- Highly corrosion resistant
- Light and easy to handle
- Very reliable double-seal joining system
- Simple push-fit assembly
- Low expansion co-efficient
- Attractive

#### Typical applications

- ACO PIPE stainless steel pipe is the fast alternative to cast iron or PVC pipe systems, and is available in standard pipe sizes with easy to assemble push-on fittings.



ACO PIPE double-lip sealing system  
Double-lip seal function principle

## Galvanised steel pipe system – GM-X

Pipes and fittings made of welded, precision steel pipes, cold-drawn in a single process in accordance with EN 10305-3. Steel is fracture-proof, non-deformable, heat and frost resistant, non-flammable, and has favourable noise characteristics.

ACO produces a complete product line of steel pipes and fittings in nominal widths from 40 to 300 mm.

### Typical applications

- Domestic wastewater installations: connection pipes, downpipes, collection pipes, groundwater pipes, ventilation water pipes and rainwater pipes.



### GM-X drain pipes

In galvanised steel, internal plastic coated, nominal widths DN 40 to DN 300.

### Benefits

- Low noise emissions
- extraordinarily low thermal expansion
- fire-resistant in accordance with DIN 4102 and DIN 1986.
- Corrosion protected
- shock-proof and impact-resistant

## Balcony drains made of stainless steel

### Modular construction

Different solutions are required depending on the installation situation when planning modern balcony and terrace drainage systems. ACO's balcony and terrace product line is therefore intelligently designed around a modular system

Everything starts with the drain bodies: depending on the model, drains with vertical or horizontal outlet sockets can be supplied. And depending on the model, the drain body can be combined with intermediate sections and a range of top section systems which allows the right drainage solution to be created for each application and floor structure.

### Typical applications

- Balconies
- Terraces



## ACO Floor gullies – a wide range of multi-application and high performance products



*ACO's product line includes a broad range of height-adjustable floor gullies suitable for any type of floor. Drainage is vertical or horizontal. The ACO modular system has a large number of flexible combination options for every installation situation.*

### Floor gullies in stainless steel

EG 150 range of Eurogullies are designed as hygienic, quick, simple and economic trapped drainage solutions. Suitable for all floor finishes including cement and resin screeds, ceramic tiles, and flexible vinyl flooring. In solid floors and suspended floors.

Manufactured in austenitic 304-grade stainless steel as standard with guaran-

teed excellent corrosion resistance. Optional 316-grade stainless steel for very aggressive applications. EG 150 Eurogullies are supplied with gratings as standard which are completely safe for bare feet or stiletto heels. A non-slip or plain mesh grating is available for cement/resin screeds and tile applications.



ACO EG 150 Range for cementitious/resin screed and ceramic tile application

#### Typical applications

- Light industrial use
- Toilets, washrooms, wet bathrooms
- Hotels, Apartments
- Swimming pools

### Plastic floor gullies

The plastic floor gullies are part of a modular system allowing various combinations in the nominal widths DN 50, DN 70 and DN 100. The perfect solution can therefore always be put together to match each situation and application. All of the risers in the WAL-SELECTA DN 50/70 product line can be used with this system.

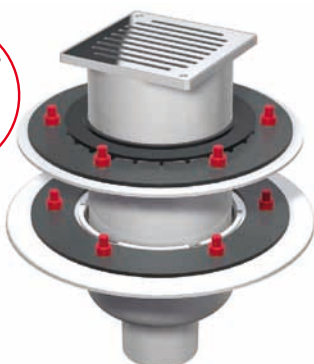


ACO plastic floor drains with top sections and stainless steel design gratings

#### Typical applications

- Bathrooms and toilets, washrooms
- Domestic/residential use

### Floor gullies in cast iron – Wal-Selecta



Cast iron is still the number one for planners, developers and plumbers because of its functionality, reliability and safety in building drainage applications. Floor-level cast iron gullies are:

- Non-flammable
- Sound insulating
- Long lasting
- Completely recyclable

- Have the same coefficient of expansion as concrete
- In nominal widths DN 50, 70 and 100
- With or without fire protection set

#### Typical applications

- Technical facilities
- Industrial buildings



## Fire protection floor gullies

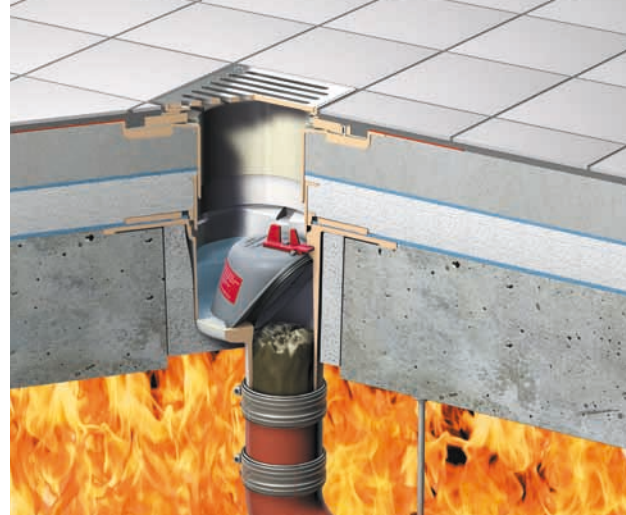


Fire protection set DN 50/DN 70 and DN 100

"Preventative fire protection for all floor gullies" has attracted an increasing amount of interest in recent years – particularly for installation in buildings for special uses, e.g. hotels, hospitals, care homes or schools – where fire-resistance specifications already exist for ceilings and floors.

### Typical applications

- Hotels
- Hospitals
- Care homes
- Commercial and industrial buildings



ACO WAL-SELECTA with fire protection set

**SELECTA floor gullies certified for fire resistance classes R 30 – R 120**

## ACO designer gratings

The ACO stainless steel designer gratings are laser-cut and have an electro-polish finish.

They are elegant, individual and superbly functional.

The gratings fit the 150 x 150 mm and Ø 136 mm frames and are therefore used as standard with the MEKU or AV-SELECTA PP risers from ACO for the thin mortar bed sealing method.

The risers can be combined with all ACO cast iron and stainless steel gullies in sizes DN 50 and DN 70 and the plastic floor gullies DN 50-100.

ACO designer gratings can also be individually made to customer specifications. In addition to the patterns shown here, any other pattern can be cut out and customised from stainless steel plate.



left: AV-SELECTA-PP risers for thin mortar bed installation. right: plastic risers with partially telescopically height-adjustable for optimal adjustment with the flooring.

Curl



Forest



Hawaii



Linea



Mix



Palm



Quadrato



Wave



## ACO shower channels – architecturally attractive solutions



### Shower channels as design elements

The Showerdrain is a channel built into the shower floor which beautifully combines form with function. The Showerdrain is the perfect high quality solution for high-class bathrooms featuring glass fixtures and natural stone floors, as well as public applications where the absence of barriers is an important consideration. The rigid channel body manufactured from stainless steel has a lateral channel gradient to ensure positive drainage of the water.

#### Cleaning

The removable foul-air trap is also manufactured from stainless steel and is designed for simple cleaning and the effective prevention of odours.

#### Grating design

Various grating designs are available in finely polished stainless steel to decorate the visible part of the channel. ACO Showerdrains are available in standard lengths from 700 to 1000 mm. The Showerdrain is an attractive alternative to a conventional shower tray in high-class bathrooms as well as in public areas.



Showerdrain with "wave" designer grating.



Simple cleaning with the removable foul-air trap.

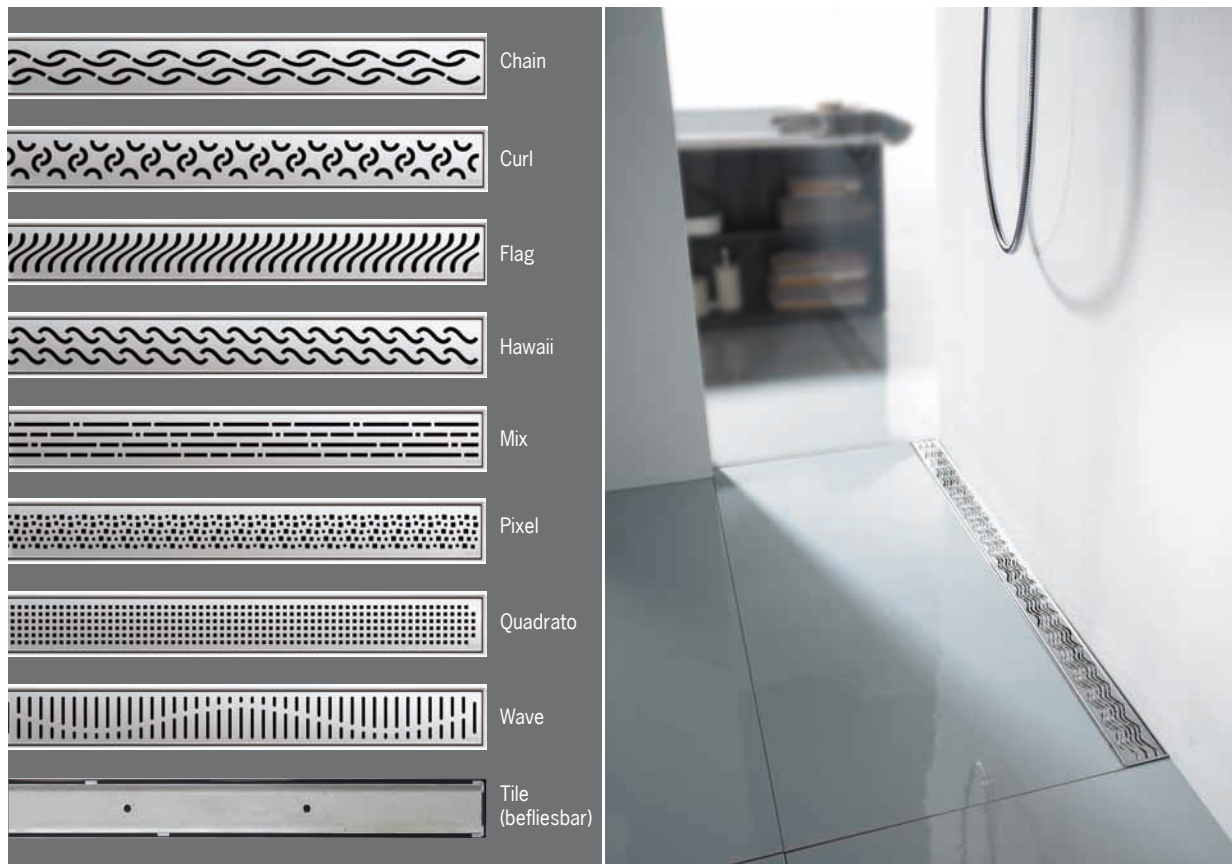
*Function and design are combined perfectly in the ACO Showerdrain and the ACO designer gratings. The high-quality stainless steel look of the channel and the gully satisfy sophisticated demands for continuous level floors.*

### ACO Showerdrain Lightline – the first illuminated shower channel

The ACO Showerdrain Lightline illuminated shower channel turns a functional part of a shower into an active bathroom design element. Combining function with design, this customised channel is made possible by another innovation: the aqua-sensitive LED lighting. The combination of high quality electro-polished

stainless steel gratings, water, and coloured LED lighting, creates a completely new shower environment. This new channel succeeds in combining simple installation and cleaning, with totally elegant design, topped off by stunning optical effects.





ACO Showerdrain in a floor-level shower

## ACO Showerboard – the compact system for channel installation

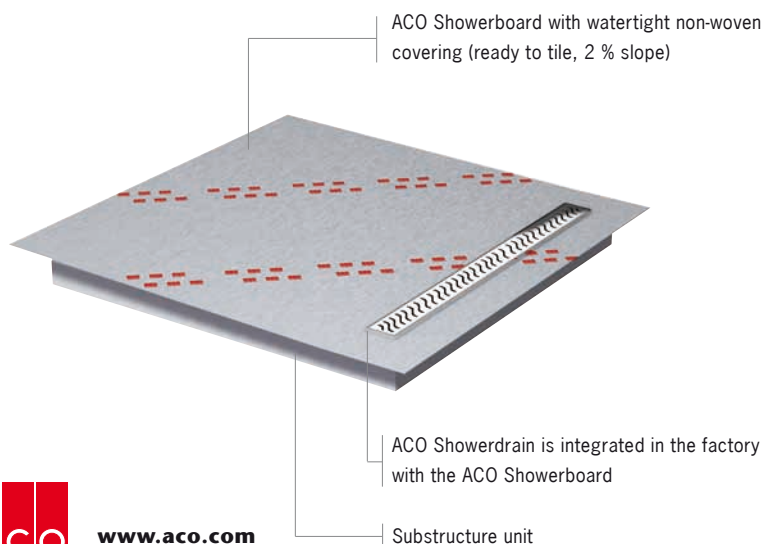
The premium solution for the installation of ACO Showerdrains is the new Showerboard: pre-fabricated to a very high technical standard.

The ACO Showerdrain is integrated within a hard-foam support coated with a watertight non-woven covering. The Showerboard can be quickly and precisely positioned and safely installed, also combined with a substructure unit if required.

The joints between the ACO Showerboard and the ACO ShowerDrain are industrially sealed for absolute watertightness.

The watertight non-woven covering on top of the ACO Showerboard extends beyond the edges so that it can be incorporated within the usual thin-bed seal to create watertight wall and floor joints. The hard foam support is a high-strength product with a built-in slope of 2 %. It satisfies DIN 18025 specifications and is therefore capable of supporting wheelchairs when combined with tiles measuring 50 x 50 mm and larger.

Installation height: 105 mm  
Drainage capacity: 0.6 l/s, tested pursuant to DIN EN 1253





### ACO stainless steel drainage

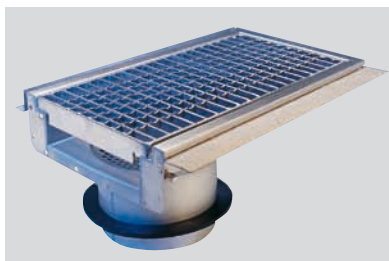


*Stainless steel is the ideal material for applications where cleanliness and hygiene are the highest priority.*

Because of its high strength, good metal-forming properties, corrosion resistance, and its smooth permanently attractive surface, stainless steel is highly prized as an extremely high quality, durable and hygienic material. It is virtually completely resistant to dirt, preservati-

ves, micro-organisms and the proteins found in meat, blood, fat and drinks, etc. Proteins and bacteria do not readily adhere to the smooth surface and can be easily removed with suitable cleaning products and disinfectants.

### Stainless steel drainage channels



#### Drainage channels

A welded construction available upon request in various channel widths and channel lengths with customised pipe connections.

Drainage channels with widths of 150 mm, 300 mm and 450 mm are produced as standard in 500 mm lengths ex warehouse.



#### Slotted drainage channel

slotted channels are supplied ex-works in lengths of 1000 mm, 2500 mm and 5000 mm. Customised solutions can be easily manufactured upon request.

#### Product benefits

- Channel widths from 150 mm to 500 mm
- Special edge profiles for abutment with tiles, artificial resin/mortar floors and thin mortar bed seals
- Range of gratings and covers for classes L 15 and M 125
- All stainless steel parts pickle passivated to ensure full corrosion protection.

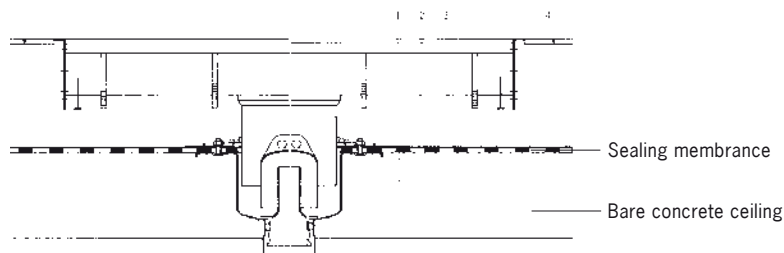


#### Modular 1000/2000

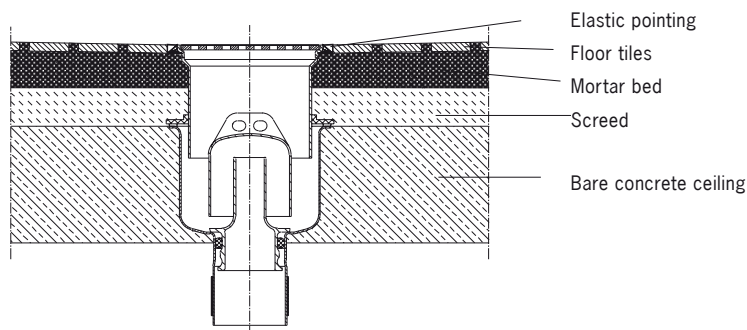
A wide range of high quality channels, gratings and industrial gullies, manufactured from 2 mm thick austenitic stainless steel provides practical solutions for floor drainage problems.

#### Customised solutions upon request

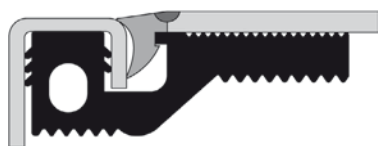
- Customised channel widths
- Material grade 316
- Extra-flat models
- Section types: NF, NFH and NK



VARIANT-CR channel with floor gully and adhesive flange, or pressed sealing flange, set level with the bare concrete floor.



Installation example: Floor gully DN 70 with retaining edge.



Installation example: Sealing vinyl sheet flooring against drainage channels and gullies.



## Stainless steel floor gullies



### Floor gullies

Consists of floor gully units with nominal widths from DN 70 to DN 150, and risers with a range of gully gratings suitable for classes K 3 to M 125.

**Available with fire protection sets  
for fire resistance classes  
R 30 – R 120**

### Product benefits

- Sophisticated modular system with floor gullies from DN 70 to DN 150
- Special AV-VARIANT riser element for thin mortar bed sealing
- Floor gullies with retaining edge, adhesive flange and pressed sealing flange
- All stainless steel parts pickle passivated in submersion baths
- Calibrated pipe connections for direct connection to SML pipe
- Non-slip gully gratings
- All gullies directly combinable with our drainage channels in stainless steel

### Special models upon request e.g.:

- risers with round gratings
- gullies with lateral inflows
- material grade 316

### Typical applications

- Industrial kitchens in canteens, hospitals, care homes, businesses, catering companies
- Pubs, restaurants, fast food outlets, cafeterias
- Abattoirs and meat-processing industry, butchers
- Food and drink industry
- Pharmaceutical industry, cosmetics industry
- Swimming pools and leisure industry

Stainless steel grade 304 and 316 are usually used for these applications.

## ACO Passavant grease separators – Fully developed products compliant with international standards



*Grease separators need to be adaptable and versatile, and be available in various sizes and materials to meet the enormous range of different industrial and commercial needs.*

*ACO has many years of experience in the production of grease separators. Its comprehensive product line includes free-standing and underground grease separators.*

*Precise engineering and in-depth expertise guarantee fully developed, quality-assured and completely tested products that satisfy all international standards.*



The ACO product line has an optimum solution for every application. Free-standing grease separators are manufactured from stainless steel or polyethylene. In addition to the two materials, there are also two disposal systems: partial and full disposal.

Partial disposal only involves disposal of the grease and solids – this is carried out by ACO's manually operated LIPATOR or the fully-automatic LIPATOMAT. Partial disposal saves water and disposal costs. Full disposal grease separators remove all of the contents.

Underground separators are made of reinforced concrete or polyethylene. The ECO-FPI is the first and only grease separator made of polyethylene with SLW 60 static certification – it therefore requires no concrete strengthening around the cover plate.

### Typical applications

- Meat processing
- Kitchens
- Restaurants
- Grilling, roasting and frying kitchens
- Motorway services
- Catering facilities

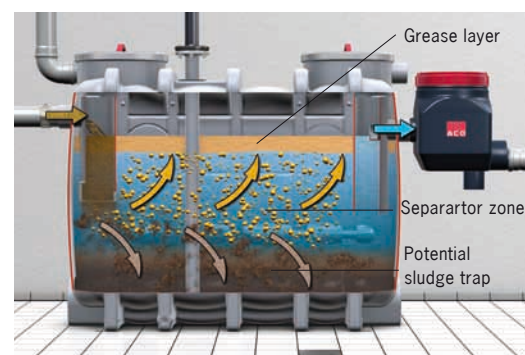
### Full disposal



LIPURAT, oval, automatic or manual control with disposal pump, optional remote control, high pressure internal cleaning, modular construction.



ECO-JET with or without direct vacuum extraction, optional fill sensor, low weight, modular construction



Full-disposal principle

EN 1825 function diagram  
Grease separator with no separate sludge trap and separator



## Partial disposal

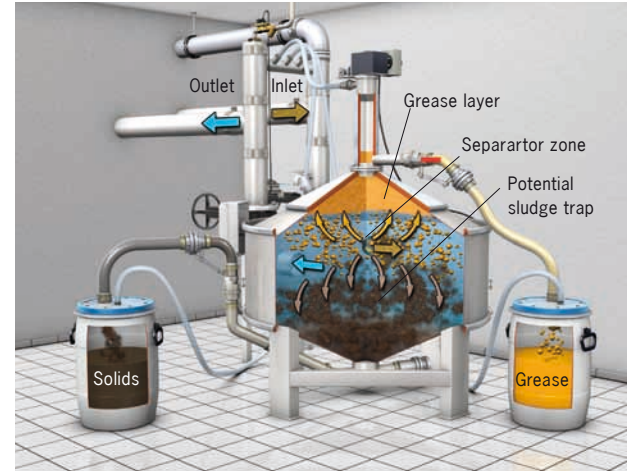
The main applications of this type of grease separator are restaurants, canteens and catering operation kitchens. The grease collects in the upper cone. The sludge sinks to the bottom of the lower cone. The grease is kept fluid by heating the upper cone

### Typical applications

- Ships
- Areas with difficult access for disposal vehicles
- Combined with wet refuse disposal equipment

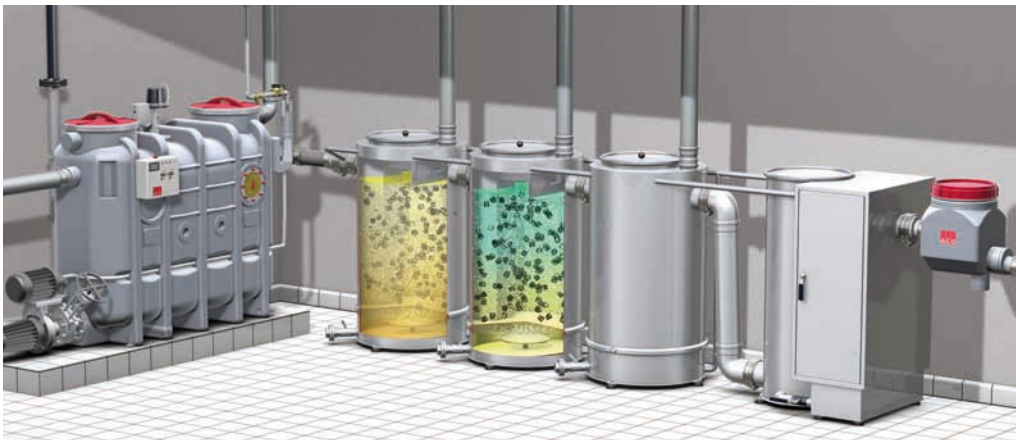


LIPATOMAT fresh grease separators in stainless steel and programme control for free-standing installation



Partial-disposal principle

## Further wastewater treatment



### ACO Biojet – the complete modular package for the further treatment of greasy wastewater.

The wastewater discharged by grease separators usually contains a residual amount of lipophilic substances measuring approx. 300 mg/l. If local regulations require more stringent reductions in the amount of lipophilic substances in the discharged wastewater, further treatment becomes necessary.

This is achieved by using ACO high performance filters or ACO BIOJET biological treatment plants, or system combinations incorporating both products. Depending on the product solution, this treatment can further reduce the lipophilic load to a minimum of 80 mg/l. Please contact our project team in Stadtlengsfeld for assistance in dimensioning the required system components.

### Product benefits

- Odour-tight encapsulation
- No additional breakdown chemicals or consumables required
- Low staff and maintenance requirements
- No residues requiring continuous disposal
- Segmented design for easy transport of the system components
- Contains strains of micro-organisms with no environmental and health risks

### Typical applications

- Kitchens attached to restaurants, hotels
- Canteens

## ACO petrol separators in steel reinforced concrete – compact and inexpensive to maintain



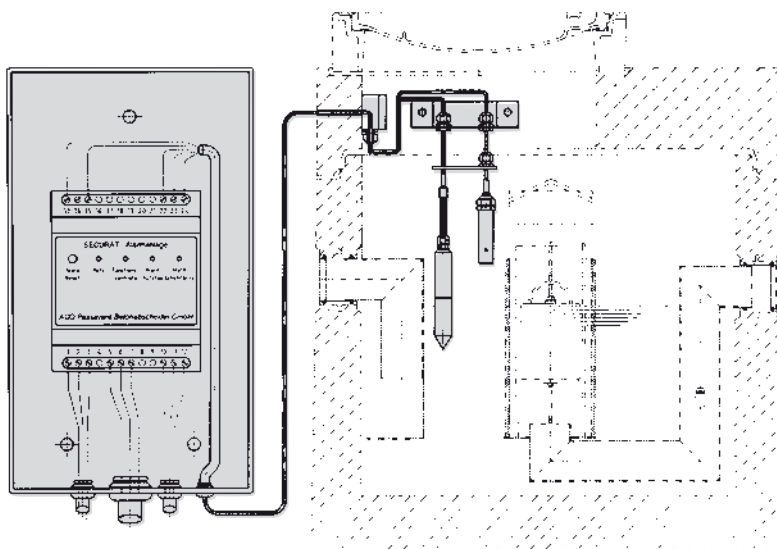
Inflammable or explosive atmospheres can build up in the wastewater piping systems of petrol stations, car washes and vehicle workshops. These hazardous atmospheres must be isolated by separator systems. ACO has four solutions available with the ACO Passavant light-oil separators Oleotop, Oleomax, Oleosafe and Oleopass, which all comply

with EN 858 and German DIN 1999-100. All light-oil separators built by ACO are class I separators (certified with 5 mg per litre residual hydrocarbons). After removal of the coalescence element, they naturally also comply with all specifications for class II separators (certified for 100 mg per litre residual hydrocarbons).

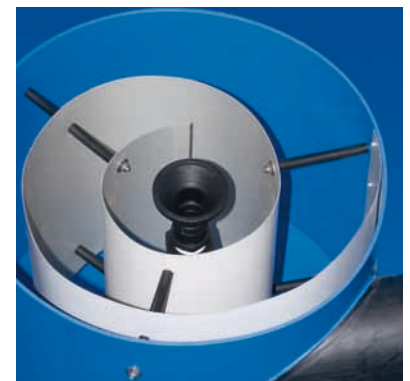
*ACO has completely upgraded its light-oil separators in response to the new European standard EN 858. This product line now sets new benchmarks for separator technology.*

### **Oleotop** New filterless class of light-oil separators

Oleotop filterless separators work with the help of Zentri-Duo cyclone technology. The innovation in this separator: sludge and light oils are separated as soon as they enter the separator tank. Whilst the heavy particles are moved centrifugally towards the outside to the edge of the guide walls where they settle out, light oil flows simultaneously into the centre – in the centripetal direction – towards the inside walls. This double effect to clean the wastewater reduces the sludge trap volume by 50 per cent – so that the total waste water content is also matchingly low. Oleotop systems are ideal, particularly for washing areas, filling stations or decanting areas.



The SECURAT 2001 alarm systems use an oil sensor to measure the thickness of the oil layer at the boundary between the separated light-oil and the water.



Fast flowing cyclone technology is behind the high efficiency of the new Oleotop separators. The light oils are sucked out through a funnel via an oil ejection device and stored in a closed collecting drum.



#### Typical applications

- Petrol stations, car parks
- Car washes, vehicle washes
- Automotive workshops, automotive trade
- Filling areas, unloading zones
- Petroleum storages, maintenance operations
- Transformer stations, power plants
- Industry and commerce



#### Typical applications

- Should be installed in all areas at risk of flooding, e.g. near rivers



#### Typical applications

- Car parks
- Large paved areas

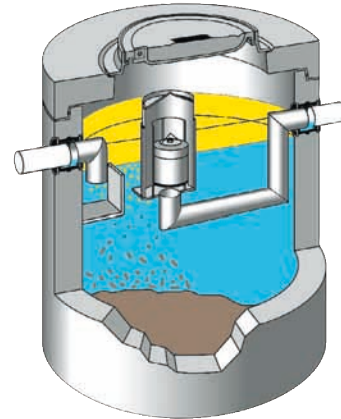
#### Separator also available in:

- Separate units, sludge trap/separator
- For installation in already existing tanks
- As a free-standing model in stainless steel and PE-HD

#### Oleomax

##### The universal separator complying with the latest standards

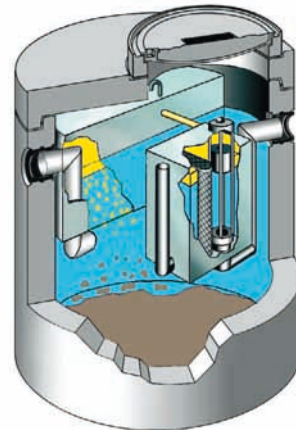
- Compact thanks to practical separator-sludge trap combination
- Large oil storage volume
- Hydraulically tested sludge trap
- Standard cover heights (classes B 125 / D 400)
- Sludge trapping volume and nominal size selectable in line with requirements



#### Oleosafe

##### The safety separator for flood-risk areas

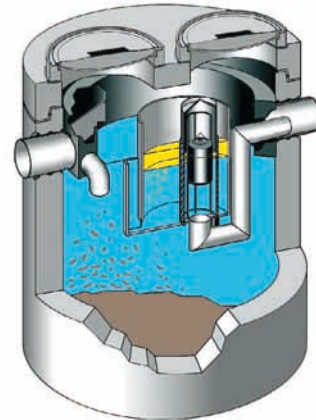
- Can be submerged by flood water without releasing the oil
- Minimised sludge trap volume
- Large storage volume for the safe storage of separated oil before disposal
- Automatic seal with ballcock – tried and tested solution requiring no mechanical parts



#### Oleopass

##### The integrated Bypass separator for cost-efficient drainage of large areas

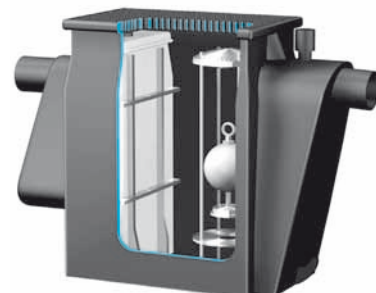
- Suitable for draining larger areas in combination with conventional separators
- All functions integrated within one tank
- Extremely easy installation
- Compact



#### Coalisator/grey cast-iron

##### Compact separator for indoor and outdoor installation

- Compact, ideal for complicated installation conditions
- Separate upstream sludge trap for optimal separation results
- Approved for nominal sizes 1.5, 3 and 5
- Ideal for elevator shafts, automotive workshops and protection against accidents





## ACO backflow preventers in plastic classified in accordance with EN 13564



*Previously an occasional hazard, the risk of backflows will undoubtedly increase in future in line with the predicted greater frequency of heavy rain storms. This is because sewers are only designed to cope with average rainfall volumes for economic and technical reasons. Mixed water sewers can therefore very quickly fill up completely during major cloud bursts. It therefore only makes sense to permanently protect all rooms and areas lying below the backflow level from the risk of backflow from public sewers.*

Backflow preventers, wastewater raising equipment and pumps from ACO provide effective protection to stop sewage water entering buildings, particularly in rooms below the backflow level. For private, as well as commercial buildings.

### Cellar gullies with backflow preventers

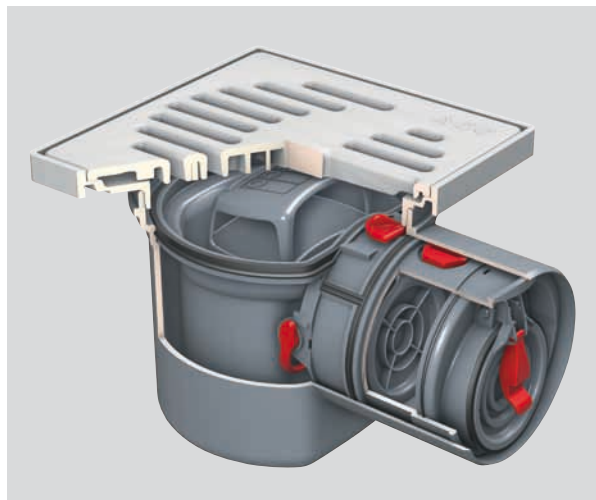
#### ACO Junior-K

- Telescopic, height-adjustable (30 mm), rotatable (360°) and tiltable (3°) riser with telescopic limit lock
- Separate foul-air trap and backflow unit
- Easily removable grating with lifting hole
- Separate emergency seal
- Side inflow with foul-air trap
- In nominal width DN 100

#### Typical applications

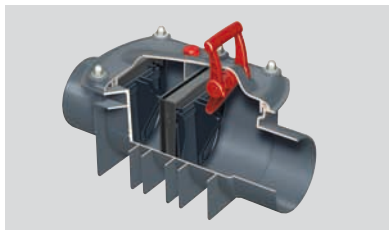
Rooms with gullies below the backflow level such as:

- Technical services rooms
- DIY rooms
- Laundry rooms
- Showers and baths
- Floor gullies



Junior-K in plastic for non-soil wastewater, grey water

## ACO Triplex-K-2 double backflow stop for continuous pipe



ACO Triplex-K-2 double backflow stop, DN 100 Type 2 pursuant to EN 13564 for installation in unenclosed pipes.



ACO Triplex-K-2 double backflow stop, DN 100 Type 2 pursuant to EN 13564 for installation within floor plates.

The ACO Triplex-K-2 double backflow stop corresponds to Type 2 EN 13564. This backflow stop is specified for use with wastewater free of faeces. It must only be connected to drainage installations generating wastewater free of faeces, e.g. floor drains, showers or washing machines located below the backflow level. The force of flowing wastewater pushes open the flap in the flow direction to drain the wastewater in the direction of the sewer. If there is backflow, the wastewater backing up from the sewer flows against the normal flow direction and comes into contact with the outer backflow flap. This prevents wastewater from the sewers from flowing back into the building. The second flap is an extra safety feature to ensure that the backflow stop functions even when the first flap fails to close properly

because of the presence of dirt, etc. The ACO Triplex-K-2 also has an emergency seal. This is integrated within the rear flap.

### Product benefits

- Minimal intrinsic gradient 12 mm, and so optimal for refurbishment
- Easily convertible to an automatic backflow stop for wastewater containing faeces

### Typical applications

- Rooms in single-family houses below the backflow level in which only drainage objects without faeces incidence have to be protected against backflow

## ACO Quatrix-K black water automatic backflow stop for continuous pipes

The ACO Quatrix-K black water automatic backflow stop corresponds to Type 3F pursuant to EN 13564. This product is designed for use with wastewater containing faeces. Type 3F backflow stops must be used whenever toilets are installed below the backflow level. When water from the sewers backflows into the pipes, the operating stop is automatically closed by a pneumatic/electric control device. As soon as the wastewater rises up above the permissible height in the pipe, an under pressure sensor sends a signal back to the control unit. The control unit automatically operates the electric motor to close the operating stop. When water no longer backflows into the system, a sensor informs the control unit and the flap is automatically reopened. The drainage installations connected to the backflow stop must not be used during a backflow situation! The presence

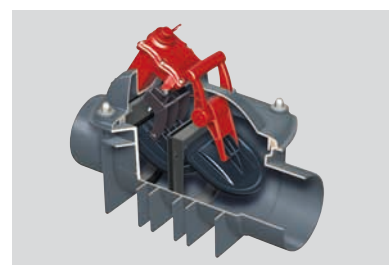
of backflow is signalled by an optical and acoustic alarm. The ACO Quatrix-K also contains a manually operated emergency seal.

### Product benefits

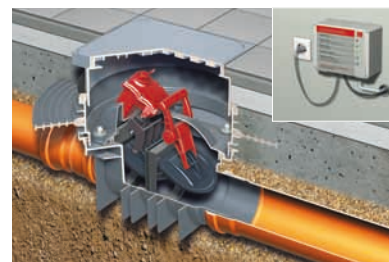
- Minimal intrinsic gradient 12 mm, and so optimal for refurbishment
- Height adjustable top section for perfect adaptation to floor level
- Optional step-wise height adjustable sealing flange for flexible adaptation to the sealing level
- Pneumatic sensor for problem-free operation

### Typical applications

- Rooms in single-family houses below the backflow level in which, among others, a urinal or a toilet have to be protected against backflow



ACO Quatrix-K black water automatic backflow stop, DN 100 Type 3F pursuant to EN 13564 for installation in unenclosed drainpipes.



ACO Quatrix-K black water automatic backflow stop, DN 100 Type 3F pursuant to EN 13564 for installation in floor plates.

## ACO wastewater lifting plants and submersible pumps – a complete range for professionals



*Professional back-flow preventers are one of the main areas of ACO product excellence in its building drainage product line. ACO has a complete range of intelligent solutions with gullies and backflow preventers, as well as lifting plants and pumps.*

### ACO wastewater and soil raising units

#### Muli-Star mono

MuliStar lifting plants are designed to raise wastewater from deeper lying rooms such as conveniences, cloak-rooms, showers or complete bathrooms. Also available with a redundant unit for higher operating reliability in housing blocks or small offices.

- Optimum tank volume utilisation - less hysteresis and pump wear
- Microprocessor-controlled switchbox - simple operation
- Low-noise pumps and back-flow preventers - quiet, better living and working conditions
- Special connection piece for rapid assembly to vacuum pipe system



#### Muli-Pro VA duo

The Muli-Pro units are mainly used in public and commercial buildings e.g. office buildings, schools, hotels and factories.

- High-quality tank in stainless steel grade 316 or polyethylene
- Designed for wastewater containing grease and soil behind a separator
- Free diameter up to 100 mm
- Variable by up to four variable inflow connection options
- Wide scope for positioning in the installation space
- PE tanks also connectable in series
- Raising equipment with PE tanks, also available as a separate pump unit



“Grease separators whose normal water level is beneath the back-flow level (cf. EN 752-1) must be drained by a downstream raising unit.”  
Quote from EN 1825-2, Section 7.3

#### Lifting plants/pumping stations for grease separators

- 1 Grease separator
- 2 Lifting plant
- 3 Ventilation pipe
- 4 Backflow loop



## Muli-Max F complete pumping station

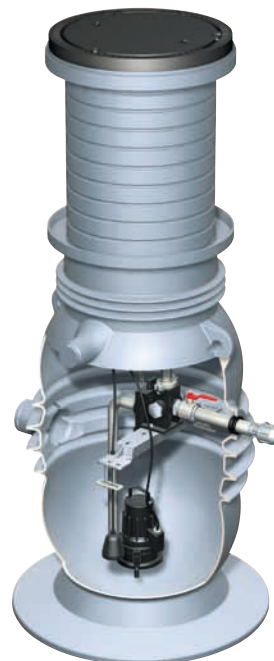
### for non-soil wastewater and soil

Muli-Max F complete pumping station for non-soil and soil wastewater.

This complete pumping station is mainly used for draining surfaces and deeper lying areas in private and commercial buildings. The complete pumping station ensures optimal vacuum pump drainage of domestic wastewater.

The Muli-Max F complete pumping station is equipped with one or two pumps (SITA or SAT models).

- Float-resistant PE container
- Also available in steel reinforced concrete
- Encrustation-resistant collecting tank
- Low maintenance and flexible over-fill pressure switch
- Installation depth up to 3000 mm



Muli-Max F pumping station

## ACO Sinkamat-K mini lifting plant

The ACO Sinkamat-K mini lifting plant is an innovative solution for draining rooms lying below the backflow level. It is particularly suitable for drainage installations in cellars such as showers, washing machines or sinks for which no fitted drainage was originally planned. This product is used for draining wastewater free of faeces. The ACO Sinkamat-K mini lifting plant also provides optimal protection against backflow because the pressure pipe has to be led above the backflow level.

- Compact Dimensions
- High quality polyethylenetouch
- Available in two types
  - For burries installation
  - For above-floor installation
- Installation without tools



## Pumps



SAT pump, with liquidising system (right) of the SITA submersible pump series

The SAT submersible pumps for clean and dirty water are suitable for stationary and transportable applications. They are designed to pump mildly contaminated water and rainwater, empty swimming pools, and drain collecting sumps and small cellar sumps.

The SITA wastewater and soil submersible pump is used to pump domestic sewage containing soil. Pump range designed for private, industrial and communal applications like abattoirs, food conservation factories and vacuum sewer systems.



SITA submersible pump. The laterally inset vortex wheel (right) guarantees complete diameter flow. It is therefore also suitable for fibrous and contaminated wastewater.

### ACO wastewater treatment technology



*In face of declining drinking water reserves and increasing unit costs, ACO has focused its attention on the recycling of wastewater for re-use. ACO systems use aeration, filtration and biological purification methods.*

#### ACO Maripur –

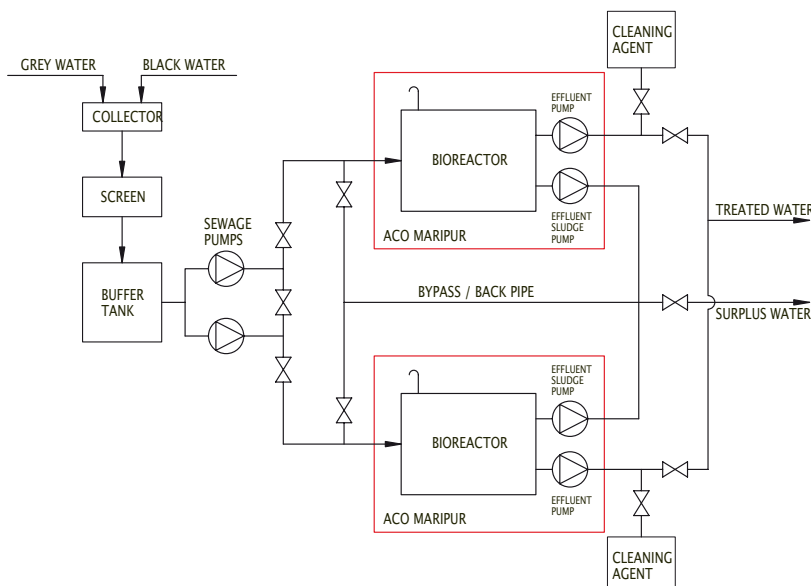
##### The highest standards of wastewater treatment

The ACO Maripur system purifies water by biological wastewater treatment combined with submerged negative pressure micro-filtration membrane technology to filter out activated sludge, bacteria and viruses.

With no need for any final purification, ACO Maripur technology purifies water in compliance with numerous quality standards: IMO/MARPOL, HELCOM, German Federal Law Gazette No. II, Page 1378 and No. I, page 1221, USCG, US Federal

Law Gazette No. 40, Section 133, ADNOC Australia and Australian Federal Environmental Agency requirements as Alaska Agreement. ACO Maripur was developed as a modular system with four basic sizes for purifying wastewater generated by 25, 50, 100 and 200 people. We can also produce customised solutions upon request.

The bioreactor is in stainless steel AISI 316Ti as standard. Construction in other materials is also possible upon request.



#### Benefits

- Low operating costs
- Smaller dimensions and more compact than conventional solutions
- Insensitive to movement on board ship
- Options for purifying black and grey water, or black water only
- Suitable for gravity and vacuum sewage systems
- Easy installation and commissioning
- Automatic operation, easy maintenance

#### Typical application

- Superyachts and Megayachts
- Military ships
- Ferries
- River Cruises
- Special ships
- Offshore

## ACO Clara – For the treatment of wastewater from single-family households and small business units


ACO Clara sewage treatment plants are designed for the complete biological purification of domestic waste water.

### Typical application

- Single-houses
- Residential areas
- Hotels
- Boarding-houses
- Companies, etc.

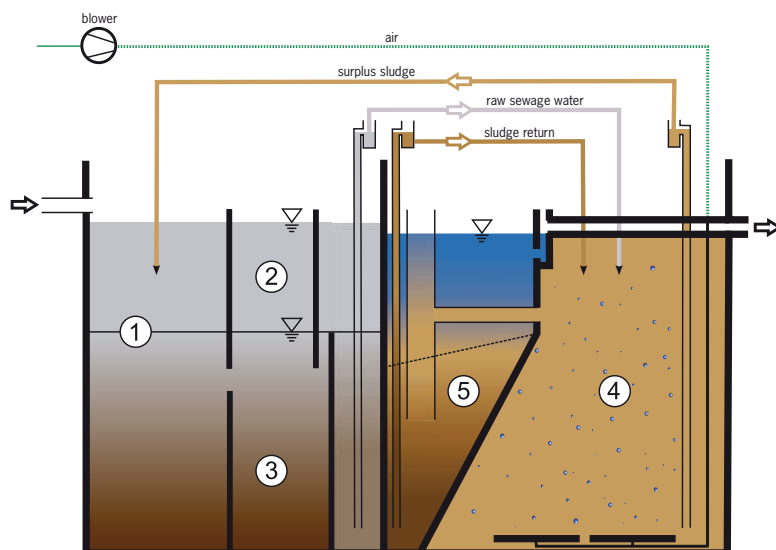
### Treatment process

- Mechanical pre-treatment
- Biological treatment by activated sludge
- Final gravity sedimentation

ACO Clara sewage treatment plants comply with all the requirements of EN 12566-3, which is proven by a  certificate.

### Benefits

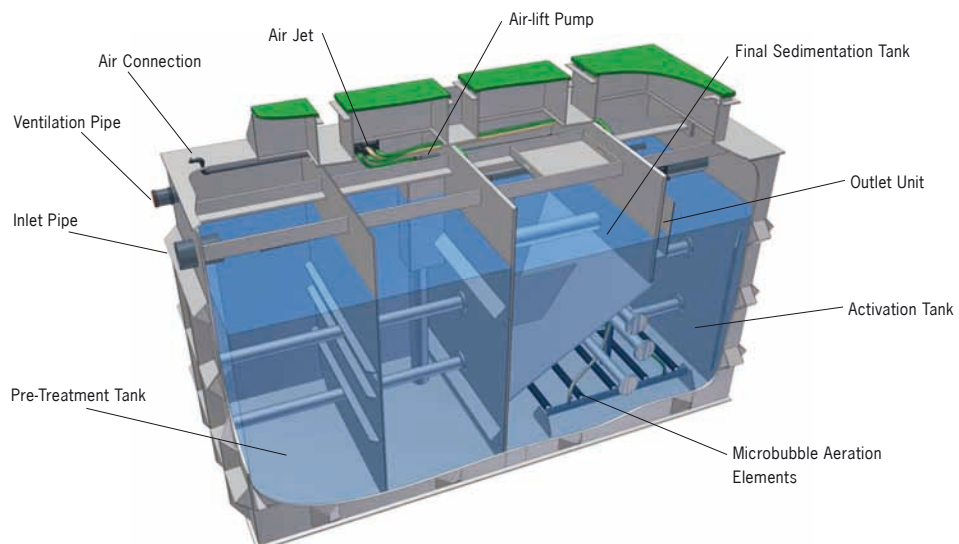
- Perfect statics
- Easy installation with no additional concreting
- Very stable and high treatment efficiency during irregular hydraulic and biological loads – overload-resistant
- First-class electrical components
- Effective purification
- Low maintenance
- Low energy consumption
- Odour-proof access cover with smart construction
- High volume of storage tank



The ACO Clara sewage treatment plant consists of a mechanical pre-treatment part and a biological compartment. The mechanical pre-treatment part is formed of a sedimentation tank with a high buffer area volume and the biological part consists of an activation tank and a built-in final sedimentation tank. Surplus sludge is stored in the storage area, which in fully loaded plants is capable of holding about 100 - 150 days' capacity.

### Key

1. Pre-treatment
2. Buffer area
3. Storage area
4. Activation tank
5. Final sedimentation tank





## ACO references

*ACO products provide you with reliable drainage wherever they are used. Versatility and quality of ACO products will solve the most mundane problems of every day life, as well as the challenges of major projects.*



Central Fish Market, Kuwait



Formula 1 circuit, Shanghai



Innovation Prize Award  
GaLaBau 2000



Airport, Belfast



Hotel Burj Al Arab, Dubai



Grand Hyatt Hotel, Dubai



CCTV (China Central Television) New Tower, Beijing



bundespreis  
produkt design  
1998/1999

German Product Design Award  
1998/1999 Nominated 2004

Olympic Stadium, Beijing



The Queen's Award for Enterprise  
2006



[www.aco.com](http://www.aco.com)





Westminster Cathedral, London



product  
design  
award

2009

The curved model of the unilluminated ACO  
ShowerDrain won  
the iF product design award 2009



Smart Center, Frenkendorf near Basel



reddot design award  
winner 2009

The curved model of the  
unilluminated ACO ShowerDrain  
won the reddot design award 2009



Olympic Stadium, Sydney



Schleswig-Holstein Design Award  
2001/2002 und 2003/2004



Olympic Boulevard, Sydney



Atomium, Belgium

Auto City, Wolfsburg



Potsdam Place, Berlin



## The ACO Group Companies worldwide

### Holding

ACO Severin Ahlmann  
GmbH & Co. KG  
Rendsburg/Büdelndorf

### Albania

ACO Elemente Ndërtimi shpk  
Tirana

### Australia

ACO Polycrrete Pty Ltd  
Emu Plains, Sydney  
Adeleide  
Brisbane  
Melbourne  
Perth

### Austria

ACO Passavant GmbH  
Baden

### Belgium

ACO Passavant NV/SA  
Merchtem

### Bosnia and Herzegovina

ACO d.o.o.  
Sarajevo

### Bulgaria

ACO Building Elements Ltd.  
Sofia

### Canada

ACO Systems Ltd.  
Mississauga, Ontario

### China

ACO Trading (Shanghai) Co. Ltd.  
Shanghai  
Beijing  
Qingdao

### Croatia

ACO Gradevinski elementi d.o.o.  
Zagreb

### Czech Republic

ACO Industries k.s.  
Přibyslav

ACO Stavební prvky spol. s.r.o.  
Přibyslav

ACO Marine s.r.o.  
Prague

ACO Industries Tabor s.r.o.  
Sezimovo Ústí  
Veselí nad Lužnicí

### Denmark

ACO Nordic A/S  
Ringsted

ACO Funki A/S  
Herning

Hvidbjerg Vinduet A/S  
Hvidbjerg/Thyholm

Hvidbjerg Vinduet A/S  
Hvidbjerg/Thyholm

### Estonia

ACO Nordic OÜ  
Tallin

### Finland

ACO Nordic Oy  
Turku

### France

ACO Produits Polymères S.A.  
Notre Dame de l'Isle

### Germany

ACO Severin Ahlmann  
GmbH & Co. KG  
Rendsburg/Büdelndorf  
Reith  
Gerichshain

ACO Tiefbau Vertrieb GmbH  
Rendsburg/Büdelndorf

ACO Hochbau Vertrieb GmbH  
Rendsburg/Büdelndorf

ACO Selbstbau Vertrieb GmbH  
Rendsburg/Büdelndorf

ACO Passavant GmbH  
Philippsthal  
Stadtlengsfeld

AKF Systemelemente GmbH  
Gerichshain

ACO Beton GmbH  
Bürrstadt  
Stockstadt

ACO Guss GmbH  
Kaiserslautern  
Michelbacher Hütte, Aarbergen

ACO Eurobar GmbH  
Kaiserslautern

ACO Edelstahl GmbH  
Philippsthal

ACO Funki GmbH  
Rendsburg/Büdelndorf

ACO Modulfarm GmbH  
Rendsburg/Büdelndorf

Inotec Sportanlagen-  
und Edelstahltechnik GmbH  
Rendsburg/Büdelndorf

### Greece

ACO Domikes Lyseis Poiotitas A.E.  
Athens

### Hungary

ACO Magyarország Bt.  
Budapest

### India

ACO Systems and Solutions  
Pvt.Ltd.  
Bangalore

### Italy

ACO Passavant S.p.A.  
Osteria Grande, Bologna

ACO Guss S.p.A.  
Mozzanica Bergamo

### Latvia

ACO Nordic SIA  
Riga

### Lithuania

ACO Nordic UAB  
Vilnius

### Malaysia

ACO Polycrrete Pty Ltd  
Kuala Lumpur

### Netherlands, The

ACO B. V.  
Doetinchem

### New Zealand

ACO Polycrrete Pty Ltd  
Auckland  
Christchurch

### Norway

ACO Nordic AS  
Slemmestad

### Poland

ACO Elementy  
Budowlane Sp. z o.o.  
Warsaw, Legionowo

Plastmo Polska Sp. z o.o.  
Warsaw, Janki

ACO Funki Sp. z o.o.  
Gorzno

### Portugal

Lusitana ACO  
Elementos de Construção, Lda.  
Matosinhos

### Romania

ACO SRL  
Afumati

### Russia

ACO Ltd.  
Moscow

### Serbia

ACO gradjevinski elementi d.o.o.  
Belgrade

### Slovakia

ACO Stavebné prvky, s.r.o.  
Bratislava

### Slovenia

ACO gradbeni elementi,  
zastopanje, d.o.o.  
Šmarje pri Jelsah

### Spain

ACO Productos Polímeros, S.A.  
Maçanet de la Selva

### Sweden

ACO Nordic AB  
Göteborg  
Malmö  
Kalmar

### Switzerland

ACO Passavant AG  
Netstal, GL  
Bätterkinden, BE

### Turkey

ACO Yapi Malzemeleri Sanayi  
ve Ticaret Ltd. Sti  
Istanbul

### Ukraine

ACO Building Elements Ltd.  
Kiev  
Lviv

### United Arab Emirates

ACO Systems FZE  
Dubai

### United Kingdom

ACO Technologies plc  
Shefford, Beds.

### USA

ACO Polymer Products, Inc.  
Casa Grande, AZ  
Chardon, OH .  
Charlotte, NC

ACO Yankee Plastic, Inc.  
Riverdale, IA



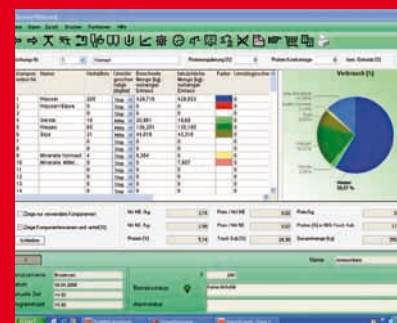
*ACO complements the core drainage competence with which it became world leader with intelligent construction components for buildings. From cellars to roofs, light shafts,*

*window systems, drain mats, domed roof-lights and light panels ACO deliver economical system solutions for private and commercial buildings.*



*The Agricultural division of ACO is the biggest in mechanization and inventory for pig stables in Europe. ACO offers stables, components and full solutions, including electronic management sys-*

*tems. The products improve the production results and are developed to take care of animal welfare, the environment and a user friendly design.*









**ACO Severin Ahlmann  
GmbH & Co. KG**

P. O. Box 320, 24755 Rendsburg  
Am Ahlmannkai, 24782 Büdelsdorf  
Germany  
Phone +49 4331 354-172  
Fax +49 4331 354-222  
[info@aco-international.com](mailto:info@aco-international.com)  
[www.aco.com](http://www.aco.com)

**The ACO Group. A strong family you can build on.**