

定制客户应用举例 1:

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When you swim in petrol, swimming is the least of your problems

Actemium is a company specialising in building robots that perform really difficult and demanding work. In this case, the robot's task is to inspect large fuel tanks. How hard can that be? Well, if the tank is full of petrol it is actually pretty hard. One spark is enough to blow the whole thing up and the cables need to be highly resistant, quite flexible and most importantly, completely anti-static.

A tank full of petrol is probably one of the most chemically aggressive environments there are. It is difficult to build a robot that can perform inspections without breaking down or causing very loud problems. There can be no build-up of static and the corrosive powers of petrol are not to be trifled with.

The right insulation is just the beginning

We decided to use a fluorine based plastic material called ETFE for the cables on the robots. ETFE is one of Habia's best suited materials for insulation or jackets for cables with high demands concerning temperature, chemical and mechanical resistance. But in this case, "high demands" is just the beginning. What about the static?

Solve one problem and say hello to the next

In order to avoid the hazard of explosions, we performed a special anti-static treatment on the ETFE jacket. So far so good. But for this application the cables need to be quite flexible since the robot is moving around in all directions.

ETFE is not flexible. At all.

The only problem we could think of was that ETFE is not flexible. It's hard, stiff and rigid. To solve that problem was quite a challenge. After many trials we managed to reach the required flexibility by putting an additional PUR jacket below the ETFE top layer. Flexible AND robust: best of both worlds and ready for petrol diving.

Our client is currently developing the next generation of this robot and now that we know how to make cables work in this environment, we are ready for whatever challenges lie ahead. Remember, it only takes a spark ...