

The logo for ARMOR is displayed in a blue, sans-serif font. The letter 'M' is stylized with a red triangle pointing downwards from its top and a red horizontal bar underneath it. The background of the entire page is a scenic photograph of a coastline with turquoise water, white waves, and a sandy beach under a bright blue sky with scattered white clouds.

ARMOR

A decorative graphic consisting of two vertical bars, one light green and one lime green, positioned to the left of the text.

Sustainable development  
at the heart of the Armor strategy 2010



## EDITO

**Hubert de Boisredon**  
CEO, Armor Group

We have chosen to place sustainable development at the heart of our strategy, and we therefore maintain our process of continuous improvement every day, both in France and in our subsidiaries abroad.

This second sustainable development report presents actions carried out by Armor employees on our production and commercial sites all over the world, which are particularly representative, and sometimes remarkable. Our determination is strong, because it rests on concrete actions and reflects our commitment to the global company responsibility approach. This orientation guides our R&D, our production, and our way of working, becoming a mindset that is shared by our employees on every continent. It also reflects our values, which are embodied in humanism, innovation and commitment - the natural consequence of which is top-quality customer service.

The solidity of a business rests on its people, its culture and its values. We are trying to demonstrate - without proselytizing - that every company can benefit from sharing and encouraging best practice with everyone else. It seems to us that one of the essential conditions for any company's investment in a sustainable development process is transparency: transparency with its partners, shareholders and above all with its employees, without whom this commitment would be impossible to achieve. This is a process of sharing our environmental and human achievements, as well as a desire for continuous progress. We want the men and women who work at Armor to find within it the means to develop - humanly, professionally and economically. In this second annual report, we invite you to continue your discovery of innovative actions - sometimes quite simply human and full of common sense - developed at Armor Group sites throughout the world.

Enjoy!

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## TESTIMONIAL

Having adopted the company philosophy underlying "Our five commitments", we, TOSHIBA TEC Group, are moving our activities forward by taking our status as a trusted 'Global Company' into account. For us, this is defined in two ways: making sure that we provide a better world environment, and recognising and respecting cultural and historic difference, as well as customs and practices, between different countries and regions. In implementing our rules of conduct for the group, we are making a major priority of human life, of safety and compliance, of the sustainability of practice and of socially responsible company activities. We very much appreciate the Armor "sustainable development" initiatives, which are clearly guided by the same philosophy as ours.

Armor has been one of our strategic partners for many years now, and we think that we could even reinforce our relationship by sharing the idea of making our contribution to society.

**Masato Yamamoto**  
Vice-President,  
Managing Director, point of sale terminal activities,  
artificial intelligence and printers  
**TOSHIBA TEC CORPORATION**

## Armor - world specialist in ink chemistry and printing technologies



### One area of expertise, two activities



**Armor Office Printing (AOP)** designs, manufactures and sells New Generation cartridges for inkjet, laser, fax and impact printers, on the office and computer markets, for businesses and private customers.



**Armor Industrial Coding & Printing (AICP)** designs, manufactures and sells thermal transfer printer consumables, the most widely-used technology in the world for barcode marking, logos, use-by dates or other batch numbers on labels or flexible packaging.

### A Research Programme



#### Organic Solar Cells by ARMOR (OSCAR)

Armor is taking a significant step forward by investing in organic photovoltaic cell (OPV) technology, in partnership with a French consortium comprising: CEA-INES (French Atomic Energy and Alternative Energies Commission - French National Institute of Solar Energy), Amcor, Plasto and the Université de Bordeaux 1, represented by the LCPO (Laboratory of Organic Polymer Chemistry).

Today, Armor is choosing to invest in renewable energies, starting with thin-film organic photovoltaic technology. In time, the company wants to position itself as a vital European actor on the sector, making this activity the group's third pillar, going into production in 2014. Armor wants to incite, and boost research and development work for the coming 30 years, via the presence of both industrial actors and publicly-owned laboratories.

**Leading** worldwide Thermal Transfer company

**Leading** compatible inkjet cartridges company in Europe

**Leading** sales of remanufactured laser cartridges in France

# Armor takes its commitment as far as the UN and UIC (French chemical industry union)

The Armor Group enhances and shares its practice by drawing on instances allowing measurement of its commitments and by publicizing these both in France and abroad. By signing up to a continuous progress approach, the Armor Group displays its determination to remain constantly in search of excellence.

## A worldwide commitment: joining the United Nations Global Compact



Armor officially supports the ten principles of the United Nations Global Compact concerning human rights, employment rights, protection of the environment and fight against corruption. The group is positioned alongside many multinationals, to promote sustainable development on an everyday basis and share best practice as well as its ambitions in this domain.

## A national commitment: the signature of the UIC's Responsible Care Charter



By signing the Responsible Care Charter, Armor seeks to show itself to be exemplary in matters of safety, and of protection of health and the environment. The Responsible Care Charter encourages the continuous improvement of company performance, through the use of performance indicators.

# Deep involvement validated by certifications



## One commitment, several objectives

Sustainable development is often defined, in terms of its purpose, as a mode of progression which will respond to present-time needs, without compromising the possibility of responding to the needs of future generations.

It is also a philosophy for action which rests on the understanding of social and environmental issues beyond the scope of the company. At local level, these issues entail the imposition of new, everyday acts. This is also the paradigm of a development comprising three components, three responsibilities: environmental, social and economic. Around these main pillars, three interfaces define a world that is fairer, more responsible and more efficient - in other words, sustainable. Armor has chosen to concentrate its efforts on these three pillars, to construct a dynamic policy motivated by the desire to make more of a contribution to a more sustainable world.



## Two operational plans of action in support of the strategy: Décαplan and Alternative Print Program

Armor integrates sustainable development as a component of its strategy in its own right, in the same way as is technological competitiveness. In order to set up actions that are perfectly suited to each of the Armor activities, two programmes support the strategy in its operational implementation.



### AICP applies the Décαplan - dedicated to the thermal transfer activity



The Decαplan implements the group's sustainable development strategy through ten priority actions. Ten working groups, including people from every level and every profile within the company (management, operators, social partners, etc.) offer, throughout the year, a range of operations to make each action a reality.

#### A ten-point plan

- **Human development:** example: setting up of a voluntary programme to improve skills in reading and writing.
- **Health at work:** example: 90% reduction in the number of accidents at work over seven years.
- **Social life:** example: 100% of employees have been introduced to the thermal transfer activities.
- **Territorial integration:** example: collaboration with local authorities for improvements to infrastructures.
- **Employee transport:** example: 20% of staff share rides.
- **Responsible purchases:** example: 100% of suppliers are made aware and assessed by a questionnaire based on social, ethical and environmental standards.
- **Eco-design:** example: development of SolFree® - the 1<sup>st</sup> and only 100% solvent-free thermal transfer ribbon manufacturing process.
- **Energy requirements:** example: gas consumption reduced by 66% in 5 years.
- **Greenhouse gas:** example: Volatile Organic Compounds emissions reduced by 83% in 4 years.
- **Waste:** example: waste reduced by 25% in 4 years.



### The AOP Alternative Print Program highlights eco-reflexes



The Alternative Print Program underlines four eco-reflexes aimed at changing usual practice, to sign up to a real sustainable development policy.

- **Reduce waste and environmental impact:** encourage the use of remanufactured cartridges bearing the NF environment label and/or the Nordic Ecolabel, and promote the use of recycled and recyclable packaging.
- **Produce more cleanly:** promote responsible purchases by making suppliers aware of the sustainable development approach.
- **Practice responsible collection of used cartridges:** offer customers an eco-responsible solution for the collection and management of end-of-life cartridges.
- **Guarantee processing of end-of-life cartridges that is 100% ecological:** recycle waste by fully dismantling the cartridges - a process that is guaranteed by the mass balance and the No Waste Solution programme.

### A response to customer concerns

From eco-designed products to recycled card packaging, Armor puts all of its resources to work to allow its customers to choose products that are more respectful of the environment. In addition to product quality, many of these now include respect for environmental standards in their technical specifications. Armor products are equipped to offer them complete satisfaction.



Reducing energy consumption, waste production, and the use of solvents allow the Armor is committed in each of these areas.

## France

Since 2008, the GRAMS project has sought to **reduce solvent consumption**. The inked film produced by Armor consists of a transparent polyester film, coated on one side with one or several layers of ink, and on the other, with a protective layer known as backcoating. The R&D team initially concentrated on solvent economies to be made in the manufacturing of the backcoating; indeed, this process is the biggest consumer of solvents. Next, this approach was applied to the layers constituting the inked system.

The solution retained was to modify the coating groups whilst continuing to guarantee a constant quantity of ink, very evenly spread. This new system enabled qualitative and quantitative gains to be made by reducing the quantities of raw materials used without having any impact on product performance. **Total consumption of solvents has been reduced by 18% in less than three years.**

## Singapore and China

**In order to reduce energy consumption**, vacuum pumps, present on the inked film cutters, were equipped with timer systems. In this way, after five minutes of inactivity, the vacuum system automatically shuts down. **The energy savings made in one day amount to 6.5 kWh** for the four slitting machines, which is the equivalent of electrical consumption of a television over a month.

## Brazil

The setting up of **best energy practice** such as turning out the lights in the unoccupied workshops and offices, as well as switching off air-conditioning at the end of the day, have allowed **energy consumption to be reduced by 10%**.



## United States

The bulbs in the production workshop and warehouses have been replaced by **solutions that are both more economic and more ecological**. High-yield fluorescent light fittings, 50% of which are equipped with movement detectors are now installed in our US facility.

This equipment allows energy consumption to be reduced. Thus, in the raw materials storage warehouse, **the lighting bill has fallen by 44%**.

Maintenance costs have also been reduced, and lighting performance improved. These new measures improve luminosity by 20%, and also put out less heat. This lighting has been welcomed by the employees, who find it brighter and more uniform.





environmental impact of industrial production to be limited, resulting in savings.

**France**

The 90 employees working at Armor's original head office had to leave in 2009 for 2 other sites in the region, to allow the complete renovation of this area of Nantes. During the move, weekly internal communication was used to **keep employees informed**. In late 2011, group employees will return to Armor's emblematic building, within a complex of low-consumption 'green roof' buildings fitted with solar panels, and surrounded by vegetable plots.

Employees at Armor Office Printing have moved to the site known as 'Cordon Bleu', which was previously dedicated to logistics. Complete renovation of the administrative parts has allowed us to rethink the way in which the building is insulated, heated, air-conditioned and lit. The 3,600 m<sup>2</sup> of warehouses now have the advantage of natural light, thanks to the installation of 71 light wells, and translucent sheets on the roofs. **These improvements will allow the site's energy bill to be reduced by 22%.**

**Morocco**

The Casablanca site in Morocco is particularly vigilant about **processing its production waste**. Its activity consists of remanufacturing cartridges to offer them a second life. Used cartridges are cleaned and all the toner powder is recycled by an external service provider to be used as an additive in other industrial manufacturing processes. In the same way, the non-recyclable cartridges are dismantled by a partner and recovered as raw material for the plastics and metals industry.

**Poland**

Artech, Armor's Polish site, has reorganised one of its workshops for the assembly of new compatible cartridges on a production line, with a view to **rationalizing space, reducing costs and energy consumption**. The area occupied by this activity has been halved, which in turn halves the cost of lighting and heating. The efficiency of the activity has been improved by 30%, versatility and flexibility of personnel have been increased and, in the event of a period of high demand, production can be increased by 30%.

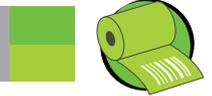


**Group**

**Raising awareness, sharing best practice**, working together on building methods of collaboration that are respectful of the environment - these are the objectives of the Team Meetings organised by the Purchasing Department. During these sessions, Armor offers an introduction or update on knowledge about the group, its industrial facilities and its perspectives for evolution, in the course of a tour, as well as through fun and creative workshops. The Armor values of commitment, humanism, innovation and customer service are then used as the basis for reflection on, and improvement to, existing partnerships - and also as a way of approaching development projects confidently. 33 people, including **27 suppliers, have already attended one of these Team Meetings.**

**One of our objectives: to reduce energy consumption in France by 10% in 2011**

ARMOR



To make sure that - regardless of age, origin, or academic achievements - each the workplace are guaranteed. Armor is determined to be part of constructing a

## Singapore

Launched by the government in 2004, the Yellow Ribbon project **aims to encourage society's acceptance of ex-prisoners and their families and to support actions in favour of their professional rehabilitation**, through programmes such as SCORE (Singapore Corporation of Rehabilitative Enterprises). Ex-prisoners are offered training and employment, and thus acquire a welcome level of stability. In 2007, Armor's Singapore-based subsidiary became involved in the SCORE project. Since then, twenty people from this programme have worked at Armor, making a significant contribution to the smooth running of the business. These employees were integrated in exactly the same way as other employees.



One of them has made good progress, and now works in Quality Control. This year, SCORE has rewarded Armor Asia with **a prize attesting to the company's commitment to this programme over the past three years.**

## United States

The Armor Knights Soccer team play indoors every week. The mixed nature of the teams has led to adjustments to the game, enabling both men and women to express their talent equally. This sports team allows 15 of the 54 employees to enjoy fun times.

## France

It is people who make the company what it is. The cohesion of teams, well-being at work, and informal exchanges are the necessary conditions for building loyalty among employees, for developing creativity and performance.



Armor seeks to develop the employability of its employees with a training course in which participants 'play' - in the theatrical sense of the word - creating cohesion, highlighting the benefits of working as a group and of helping one another within a team. The BeCom programme (as in Well-BEing and COMmunication) falls within Décaplan's human development, health and safety domain. In 2010, **61 people attended these workshops** - for the most part, machine operators and their management.

"Thanks to the tools on offer, we are better at decoding certain behaviours, we work better together" notes one of the trainees.



The increase in musculo-skeletal disorders is a problem frequently encountered on the production sites. As well as the redesign of workstations, the Health at Work group suggested the application of an additional and unusual solution for supporting the machine operators.

Since March 2010, **about a hundred employees in slitting and packaging activities have signed up to the Workstation Health Workout programme.** Muscular exercises, with professional supervision, are offered morning and night, as people take up their posts. These 10 minutes of warm-up, which are conducted during working hours, prevent injuries. They are also an opportunity to cultivate a good atmosphere within the group.

## China

Pre-alignment benches have been designed to facilitate the positioning of cores on the inked film slitting shaft. This innovation will **allow the effort of concentration to be lessened. It also reduces the level of physical demand**, by avoiding twisting of shoulders, elbows, wrists and spine. In addition, the repetitiveness of the movements related to positioning the cores on the shaft is reduced. Inflation posts have also been installed on the slitters, replacing the manual system. These allow all the effort made by the shoulder, arm and hand to be avoided, and contribute to the correct positioning of the operator during positioning of the cores to the slitting bar. The combination of these various tools engenders a **considerable reduction in the appearance of musculo-skeletal disorders.**





employee feels good, and that their health and safety at world that is more caring.

### France

Due to the company's reorganisation, a disabled employee, who had been with the company since 1981, was left without a post. Armor pulled out all the stops to find a lasting solution for one employee, who had encountered great difficulty in finding a new post. An opportunity presented itself with the purchase of a machine for recycling the cardboard waste generated by supplier products. Up until now, these boxes were destroyed - representing significant expenditure. A post has therefore been created for this employee, as a



packer, feeding this machine which recycles the boxes by manufacturing protective stuffing for packages being dispatched. The Armor Office Printing activity has thus **reduced its cardboard waste by 62% in a year**, and during the same period its **purchases of protective packaging products have fallen by 28%**. **Maintaining employment by imagining simple, economic and ecological solutions** reflects a corporate project which is meaningful, whilst also bringing people together.

### Morocco

Armor established its Moroccan production site in 1992 in Casablanca, and now employs **320 people in an economic area that is particularly affected by unemployment**.

Armor has created a management structure that is resolutely close to its employees. The company offers personnel financial support at the Feast of Sacrifice, contributes to the education of its employees' children by helping them meet the cost of school bags and equipment, participates in



local life by sponsoring the football team and tops up the payments made by the state in the event of sick leave. This is why two employees, having had to stop work for a long-lasting health problem, were able, for as long as was necessary for their recovery, to continue receiving their full salary until their return to work.

### Group

During Sustainable Development Week, the group's employees in France were **made aware of healthy eating choices** via the "Bien dans son assiette" operation. The prime objective was to inform employees about how they could change their everyday eating habits for the better. Events were organised at each site, to explain the meaning of the logos

marked on food, as well as why it is important to eat locally-produced, seasonal foods, and how the choice of organic foods is so important today. These interactive workshops were completed with the showing of a film: "Our children will blame us" by Jean-Paul Jaud, in a cinema in Nantes, to which employees and their families were invited. The film

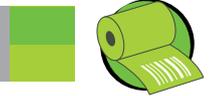
was followed by a debate, and the announcement of the gradual introduction of eco-citizen meals in the group's company restaurants.

Delivery of local organic and seasonal fruit and veggie boxes was also set up in spring 2010 at the 3 Armor sites in Nantes.

ARMOR



**One of our objectives: 0 accidents in 2011 for all Armor sites throughout the world**



It is the responsibility of each person to reduce the impact of human activity on our institutions which render this meaningful. Armor wants to play a major role in this.

## France

A transversal approach is made to the reduction of Greenhouse Gas emissions (GG) at the Thermal Transfer Industrial Expertise Centre.

The main lever for **reaching the objective of a 15% reduction in GG emissions between now and 2011** is eco-design, through:

- Research and the use of renewable raw materials, bio-components or components made of recycled materials
- Optimization of the consumption of raw materials
- Innovation in the solvent-free ink manufacturing process

The R&D team has already developed a revolutionary process allowing the manufacture of a thermal transfer roll without any use of solvents. This technology, named SolFree®, allows limitation of the impact on the environment and on people's health, without having any repercussions on sale price.

Alongside this, a Carbone® audit, carried out annually, allows us to quantify and monitor the impact of the site's activities on global warming. Carbon labelling for internal use has also been created, to class our thermal transfer ribbons in line with their carbon footprint. This classification allows us to define which products should be prioritized for evolution. This information features on the presentation sheet for each product. A carbon costs sheet has also been set up. It allows calculation of the CO<sub>2</sub> emissions linked to professional travel, and above all, makes users aware of the carbon impact of various modes of transport.



## Singapore

Armor Asia is maximizing its supplies of raw materials (labels, boxes, cores, etc.) from local suppliers. Eleven Singaporean companies are working in partnership with Armor, which **reduces the activity's carbon impact whilst supporting the local economy.**

## United States

The gains generated by the recycling of aluminium cans benefit Armor USA employees and **raise awareness through an action that is both simple, and easy to apply in their personal lives.** Indeed, management has elected 2 candidates from among the volunteers. Its choice was based on their current financial needs. In this way, every month, the two employees selected are responsible for collecting the containers dedicated to the recycling of aluminium cans, and taking them to a recycler. In exchange, they share the profits made from the consignment of cans.

## China

Every day, an Armor minibus is made available to the 56 employees who want to use it for their journeys to and from work. This is way of **rationalizing each person's travel arrangements.**





planet. It is the sum of initiatives taken by private individuals, companies, and

### Poland

Artech uses 122 tons of ink a year. Because cleaning the tanks is potentially a high-pollution activity, purification of the waste water has been entrusted to a local specialist. Every year, this specialist, approved company, located in the Prudnik area, processes 320 tons of soiled water. The plastic waste left after moulding for the inkjet cartridges are also re-processed. **Of the 192 tons of plastic consumed, 10 tons are transformed** into powder or granules to be re-used in the manufacture of new products: 5 tons are recycled in this way every year in our own production, and the rest is sold.

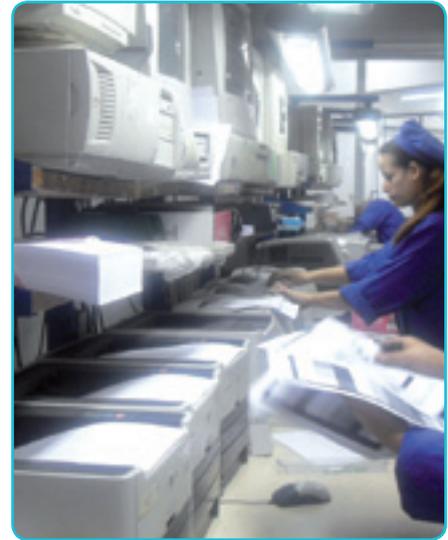


### France

To ensure the stability of pallets of boxes of print consumables during transfer from the Moroccan production site to its French logistics platform, Armor has replaced the wooden pallet collars with cardboard collars and sheets. Because these are lighter than the wooden ones, transport-related economic and environmental costs are reduced. In addition, these elements provide a co-operative tie between the Moroccan and French Armor sites, because they are recycled and constantly travelling between the two countries. Thus, in 2010, **100% of the collars and sheets recovered in France were sent back to Morocco as raw materials.**

### Morocco

In order to **limit the carbon impact** of the site's activity, some of the packaging components from the toner cartridges are bought from three Moroccan companies- another way of supporting the local economy.



**One of our objectives: to recycle 100% of our production waste between now and 2012**

ARMOR

### Group

Since 2000, the Armor group's IT department has chosen to replace PCs with 'thin clients' - a computerized solution that is lightweight, economic and more respectful of the environment.

Beyond their usage, 'thin clients' are also ecological in terms of their design, which requires less materials and energy for its production. They are 90% recyclable, and have a longer life span than PCs. To date, 27% of the Armor group's IT facilities are equipped with thin clients. This figure rises to 45% for France. The objective is to maximize use of thin clients because they use **10 times less energy than PCs.**



Armor is also gradually replacing cathodic screens with TCO-labelled LCD screens. This measure will allow the energy consumption of screens to be reduced by 90% - and as a bonus, LCD screens don't emit electromagnetic waves. To date, 80% of cathodic screens have been replaced by flat

screens at the La Chevrolière site, and 100% at the other French sites. Armor has opted for the virtualization of its servers, as part of this same determination to reduce the energy consumption of its IT facilities. On the Nantes sites, a set of 50 servers has been virtualized down to 4 servers, another group of 28 servers has been replaced by 3 servers and lastly, a third set of 12 virtual servers has been concentrated onto 2 physical servers. In the United States, a similar project is underway to reduce the number of physical servers from 7 to 2. This measure will **avoid the emission of more than 477 tons of CO<sub>2</sub> per year** - that is, a reduction in emissions equivalent to that produced by 51 houses.

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service Humanism **Innovation** Commitment  
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ARMOR  
20 rue Chevreul - BP 90508  
44105 Nantes cedex 4  
Tél. +33 (0) 2 40 38 40 00  
Fax +33 (0) 2 40 38 40 01  
armor@armor-group.com  
www.armor-group.com

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