



Innovative Medical  
Application for  
Sandwich Sheets

# Hylite Makes New X-ray Film Cassette Lighter

Sandwich sheets from Corus Hylite BV play a major role in the production of the new KODAK X-OMAT cassette. Their use not only results in the weight of the cassette being reduced by more than 25 percent, but also enables a reduction in radiation exposure to the patient.

**W**hether X-ray film images provide optimum image quality to facilitate faster and more accurate diagnoses depends on various factors.

Although the training, experience and skill of the radiologist and radiologic technologist are important, a number of technical requirements must also be satisfied. The latter requires not only high-quality films and film processing procedures but also suitable film cassettes for capturing the images.

Eastman Kodak Company, based in Rochester, New York, USA, is the world's largest photographic and diagnostic imaging film manufacturer. Kodak is also one of the leading suppliers of X-ray film holders, which are called cassettes. This company recently introduced a new X-ray cassette, replacing the cassette that it had been selling for more than 25 years. The company describes it as "the lightest X-ray film cassette Kodak has ever produced". A further advantage is that the panel material of the new cassette offers a reduction in the amount of X-ray exposure needed for virtually all X-ray examinations. The new cassette's design does not lead to a reduction in the

durability compared to the previous Kodak X-ray cassette. Added to this are other important advantages such as ease of handling, and the guarantee of extremely close contact between the sheet of film and the X-ray intensifying screens. This aspect helps produce a sharper x-ray image, which can make diagnosis easier and improve patient care.

## Weight reduction of 27 percent

It is the use of Hylite sheets in producing the top and bottom halves or panels of the new Kodak X-ray cassette that has made these new product advantages possible. Kodak has replaced the previously used solid aluminium cassette panels with the sandwich sheet consisting of a 1,6 mm thick polymer core and 0,2 mm aluminium layers at the top and bottom.

This idea occurred to the Kodak engineer responsible while reading about Hylite's special properties and low weight in a technical journal. After initial contact had been established with Corus, Hylite samples were sent from Holland to America where experiments were undertaken in Kodak's Research Laboratories. It was soon after this that the Kodak development team became convinced that Hylite could be used to produce considerably lighter film cassettes without having to sacrifice other quality characteristics such as strength and durability. The new KODAK X-OMAT cassette is actually 27 percent lighter than its predecessor, offering considerable improvement for the work of X-ray personnel. "Kodak was aware from market research and customer surveys how important this consideration was for market success. This is not difficult to understand if one considers how many film cassettes are handled day after day in an X-ray department," says Johan ter Maat, the Marketing and Sales Manager at Corus Hylite BV in IJmuiden, The Netherlands. "Due to this main advantage and the other benefits of the new film cassettes, Kodak will now be even better positioned to develop its world-wide potential in the medical imaging area."

## Special thermoforming process

Naturally, a long series of production stages and well thought-out procedures had to be undertaken before the Hylite sheets became finished KODAK X-OMAT cassettes. First of all the 1540 x 3000 mm highest grade sandwich sheets are transported from their production site to the Corus plant in Duffel, where they are cut to a size of 1000 x 1540 mm. This is followed by transportation via ship and train to the USA to the fabricator Serigraph Inc. in Wisconsin.

The sheets are then given a polycarbonate plastic covering on the outer surface before being cut to the appropriate size for the 13 different film cassette dimensions required by Kodak. Kodak then converts the panels to the correct shape in a specially developed thermoforming process.

This shape is of major importance because the top and bottom panels of the film cassette have to be curved so that they press out most of the air from inside the cassette as the cassette panels are brought together and closed. "Both sections", Kodak explains, "end up level and parallel in the closed film cassette, and extremely close contact between film and screen is achieved." This contact is



*Edges that can withstand rough treatment, a durable hinge and a sturdy window for labelling the films, together with the use of Hylite for top and bottom panels are important features that guarantee toughness and durability.*

improved further by compressible polymer foam on the rear of the screens.

In order to prevent damage to the cassettes because of careless handling over time, essential features of the cassette include cassette edges that can withstand rough treatment, a durable hinge, and a secure cassette latch. Furthermore, a thin sheet of lead foil inside the KODAK X-OMAT Cassette can be easily removed, which reduces environmental pollution at the end of the cassette's life and simplifies the disposal of the film cassettes. Customers worldwide have already confirmed the high expectations about the success of this innovative product. □

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