



With this notice we want to pay attention for serious problems and failures for seagoing vessels specially designed for heated dangerous liquid cargo. Repeatedly we receive reports about this matter. Our impression is that more knowledge how to design and handle the cargo plant is a must!

At the end of the 80ies of the last century in conventional tankers failure by fatigue were detected with as final result the loss of the complete cargo plant for heated cargo's

We, the precursor of ASC and Beele Engineering developed a very successful system with independent cargo tanks.

The basic idea is simple: Avoid to high thermal stresses by separating the vessels structure and the cargo plant by high quality thermal insulation! An additional benefit was the saving of heating energy to keep cargo on the high temperature.

Unless the clear simplicity we had to solve some nasty detail design problems an class approval procedures with as result, among other, the approval of the unique ULEPSI supports. ULEPSI minimizes the heat flow from the cargo tank to the supporting bottom structure by sufficient load capacity.

All our experience through the years was laid down in several papers, from end of the 80ies of the last century on, as guidelines for designers.

Now the content of this papers are further developed and more elaborated in our recommendation draft from November 2017 for the structural design. It is our intention that this recommendation will become available shortly. It's our intention to support this rule by a presentation.

Of course, product tankers have to comply with regulations for carrying dangerous good in bulk from IMO furthermore and the class authorities. But it's not enough; generally these regulations and rules do not cover the special physical laws for heated cargo. Rules without dealing with the special physically behaviors of by high temperature expanding independent tanks are incomplete for a design of a tanker for heated cargo! Looking at the physical background, it might be more complex than one think, and there are many not clearly defined approaches

The signals we get, is that it seems to be necessary that designs of such vessels must be supported by additional guides, see our recommendations.

Worrisome is the development to build again in the vessels structure integrated tanks! Even if the cargo design temperature less high and HT-steel is used to avoid plastic deformation, caused by thermal stresses where no elastic behavior is possible, fatigue will be a fact. Remind also a lager stress range and that HT-steel is more sensitive for fatigue! Integrated tanks for heated Cargo's belong to the past an should be forbidden by the authorities like single hull tankers

With the experience about many years we started to build new software to tackle the most items of a good design taking into account a lot of theoretical details. This program is just under development by ASC! In the current state of development, it is a test tool and demo; after successful tests it will become available