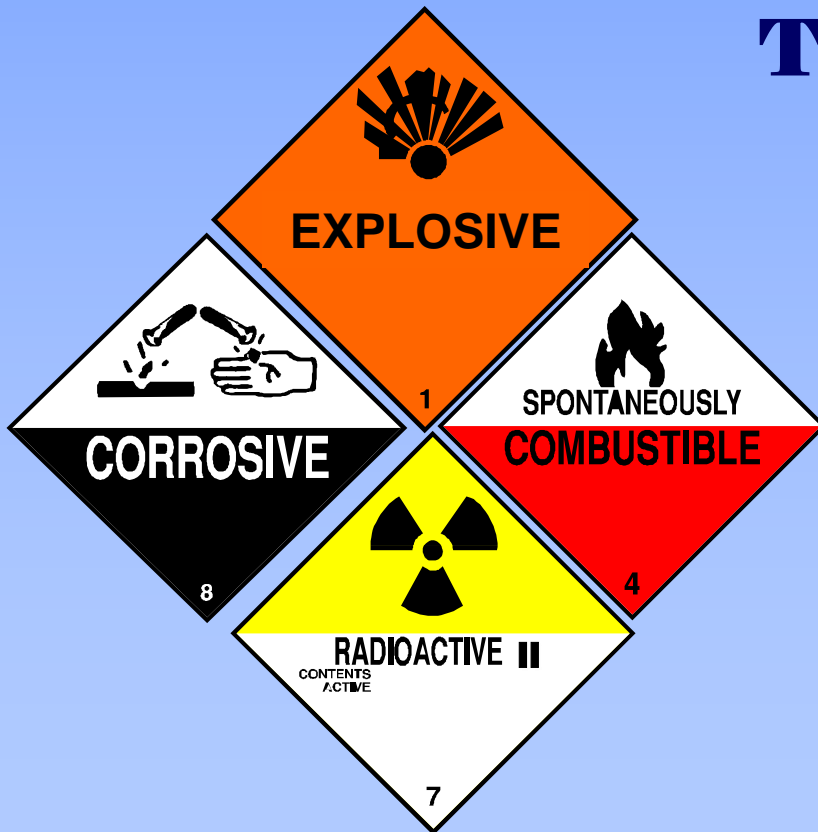


KEITH McMURRAY

D.G. CONSULTANTS



Transportation of Dangerous Goods

**National Road Traffic Act
93/96**

**Potholes and Legislation
Update 2018**

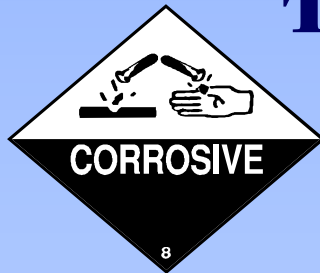
**keithmc@mweb.co.za
082-8282847**

DANGEROUS GOODS POTHOLEs AND UPDATE

- ④ **SANS 1518 – DESIGN REQUIREMENTS**
- ④ **SANS 10231 / 10232/1 – OPERATIONAL
REQUIREMENTS / EMERGENCY SYSTEMS**
- ④ **GENERAL UPDATE**

TRANSPORTATION OF DANGEROUS GOODS

**DESIGN, CONSTRUCTION, TESTING,
APPROVAL AND MAINTENANCE OF
ROAD VEHICLES AND PORTABLE
TANKS**



SANS 1518

SANS 1518 Vehicle Design Requirements

- ❖ When the legislation was published in 2000 and introduced in 2001,
 - ❖ SABS 1398 Design criteria for petroleum based flammable tankers and
 - ❖ SABS 1518 for other tankers were the criteria for all road tankers manufactured after the implementation date.
- ❖ No requirements at that stage for packaged goods vehicles or light vehicles.
- ❖ In 2004 new codes were published to cover the design criteria of all heavy vehicles transporting dangerous goods as follows
 - ❖ SANS 1518 part 1 – Generic requirements for all dangerous goods vehicles
 - ❖ SANS 1518 part 2 – Design requirements for tankers
- ❖ In December 2005 another new code – SANS 1518 - was published for heavy vehicle design based totally on the European ADR requirements. Unfortunately the European ADR had many fundamental differences with accepted South African practices.

SANS 1518 Vehicle Design Requirements

- ❖ **A technical committee assessed the differences and SANS published SANS 1518-2008 (Feb 2008). This standard included South African requirements.**
- ❖ **SANS 1518 – 2011 was published (March 2011) and the gazette legalising the incorporation of the standard was gazetted in March 2012. The scope of the revised standard indicated compliance for all vehicles light and heavy.**
- ❖ **SANS 1518 – 2015?? – Has been drafted and circulated for public comment. As at the beginning of May 2018 the standard had not been published**
- ❖ **Important to remember that SANS 10231-2018 indicates that the design and construction of the vehicle used for the transport of dangerous goods shall comply with the design requirements covered by the relevant standard valid at the time of manufacture of the vehicle. (Clause 6.2.1.1)**

SANS 1518 Vehicle Design Requirements

- ❖ **Use of vehicles and tanks not complying with this standard**
- ❖ **Vehicles and tanks of no known construction standard shall be upgraded to at least the equivalent conformity of the earlier SABS 1398:1994 standard of construction within 5 years of publication of this standard and then treated as per tanks constructed before 1 August 2001. Last day of use - After 5 years of the date of publication of this standard**
- ❖ **SABS 1398 or SABS1518-1996 constructed before 1 August 2001 - Last day of use - 31/12/2015**
- ❖ **SABS 1398 or SABS1518-1996 constructed after 1 August 2001 - Last day of use - 15 years after date of construction**
- ❖ **SANS 1518-2004 - Last day of use – 15 years after date of construction**
- ❖ **SANS 1518-2008 - Last day of use – 15 years after date of construction**

SANS 1518 Vehicle Design Requirements

Notwithstanding the requirements detailed, vehicles and tanks may continue to be operated beyond the stated dates in the following cases:

- ❖ The tank is approved for continued use by the competent authority based on a verification of the design which shall include internal inspections, material thickness verifications, non-destructive tests of tank welded joints, pressure testing of the tank and general compliance with the original design standard.
- ❖ The approval shall not be a given and shall depend on ongoing safety considerations and suitability of tanks constructed in accordance with superseded standards in meeting the considerations.
- ❖ Such approval is granted for a maximum period of three years. Approval shall be renewable for further 3-year periods.
- ❖ The approval shall not be granted for vehicles and tanks of no known standard of construction.

The dates given as the "Last day of use" shall not be regarded as final and binding. Ongoing safety and design considerations and suitability of tanks constructed in accordance with superseded standards in meeting the considerations shall dictate periodic review of the dates.

SANS 1518 Vehicle Design Requirements

❖ REGULATION 275 – TRANSPORTATION OF DANGEROUS GOODS PROHIBITED

No person shall operate on a public road any vehicle in or on which dangerous goods are transported unless transported in accordance with Chapter VIII.

- ❖ The scope of SANS 1518 covers requirements for the design, construction, testing, approval and maintenance of road vehicles and portable tanks used to transport dangerous goods as classified in SANS 10228 and as required by the relevant national legislation in quantities in excess of the exempted quantities.**
- ❖ Subsequent to 2011 the maintenance requirements had been moved to SANS 10231 – 2014 and now included in SANS 10231-2018**
- ❖ The standard can only be read in conjunction with the *European Agreement concerning the international carriage of dangerous goods by road (ADR)*.**
- ❖ Important to note that should any area of conflict exist between this standard and the ADR, the South African requirements take precedence.**

SANS 1518 Vehicle Design Requirements

- ❖ **Certificate of approval - Clause B.1.6**
- ❖ **Upon completion of construction of the vehicle, the manufacturer shall issue a certificate of compliance confirming that the vehicle complies with the requirements of this standard.**
- ❖ **The certificate of compliance shall be approved by the approved inspection authority.**
- ❖ **Important note – the latest SANS 1518 has amended the above requirement to exclude the approval requirement for certain vehicles. NRTA amendment to regulation 8(2)(g) in 2014 is in conflict with the standard**

B.1.6.2 The certificate of compliance shall be approved by the competent authority. This requirement does not apply to

- a) A truck tractor;**
- b) A freight carrier chassis delivered to a body/tank builder for the fitment/installation of the tank or other cargo carrying body; and**
- c) Any other vehicle designed to carry removable tanks and packages of any kind.**

SANS 1518 Vehicle Design Requirements

- ❖ The certificate of compliance shall contain at least the following information, as applicable:
 - ❖ Certificate number; Description of the vehicle;
 - ❖ Name of the vehicle manufacturer; The vin;
 - ❖ Name of the body/tank manufacturer; Body/tank manufacturer's serial number
 - ❖ Vehicle designation in accordance with the ADR; Year of manufacture of the tank/body;
 - ❖ Approval number of the tank/body; Tank code in accordance with the ADR;
 - ❖ Relevant special provisions; Name and business addresses of the owner and operator;

- ❖ Confirmation of compliance with this standard; Confirmation of compliance with relevant national legislation

- ❖ Certificate of approval in terms of SANS 1518-2011
 - ❖ The vehicle shall not be registered as a dangerous goods vehicle without the certificate of compliance being presented.(as required in regulation 8 (2)(g) of the NRTA

SANS 1518 Vehicle Design Requirements

- ❖ **Regulation 8 (2)(g) - Manner of application for registration of motor vehicle**
- ❖ **An application for registration for the first time in the case of a vehicle to which standard specification SANS 1518 applies must be supported by a certificate of compliance with the provisions of the standard issued by the manufacturer, the manufacturer's agent duly appointed as such, or an approved authority**
- ❖ **It must be remembered that SANS 1518 applies to all vehicles transporting dangerous goods, both light and heavy vehicles – tankers, rigids for packaged goods and light delivery vehicles.**

SANS 1518 Vehicle Design Requirements

- ❖ **Amended regulation 8(2)(g) – NRTA 2014**

In the case of a vehicle to which standard specification SANS 1518 “Transportation of dangerous goods – design, construction, testing, approval and maintenance of the road vehicles and portable tanks applies, a certificate of compliance shall be issued by the manufacturer confirming compliance to the standard and the certificate of compliance shall be approved by the competent authority

- ❖ **As indicated this is presently in conflict with the current draft of SANS 1518**

- ❖ **Regulation 13 (6) – manner of registration - NRTA**

- ❖ **A motor vehicle shall be recorded as “allowed to convey dangerous goods” in the register of motor vehicles if the standard specification SANS 1518 applies to such vehicle**

SANS 1518 Vehicle Design Requirements

Examples of certification by manufacturers when compared with the requirements of the standard.

❖ Inspection requirements of road vehicles used to transport dangerous goods as classified in SANS 10228 and in quantities in excess of the exempted quantities listed in SANS 10231, in accordance with the obligation for municipal dangerous goods transport permits required of municipal emergency services.

❖ The manufacturer hereby confirm that the relevant vehicle has been constructed and delivered in accordance with the requirements of the relevant sections of SANS 1157: 2013 table 1 section e which include the fitment of fire extinguishers, dangerous goods placards and related safety signs which comply with the requirements of SANS 1518: 2011.

SANS 1518 Vehicle Design Requirements

Repair and modifications of vehicles and tanks

All vehicles shall be repaired and modified in accordance with the requirements of the original construction standard of the vehicle and tank in all respects.

Such repairs and modifications carried out to the tank shall be verified, tested and certified strictly in accordance with the requirements of the original standard of construction of the product containment area.

All repairs and modifications to the tank shall be logged and held on record by the operator of the equipment. The records shall contain the following detail:

The name of the organization that affected the repair

The date of the repair

A brief description of the work done; and

All relevant test and inspection documentation that proves that the repair or modification was done in accordance with the original design and manufacturing standard.

The records shall be kept for the lifetime of the tank and if the equipment is sold to a future owner, the records shall be carried over to the next owner and continued to be kept by such next owner.

SANS 1518 Vehicle Design Requirements

Repair, modification refurbishment and replacement of equipment

Any repairs, modification and refurbishment of equipment governed by specific requirements contained in any specific standard (being this standard, by reference or directly, or the original standard of manufacture of the relevant equipment) shall be carried out in such a manner that the equipment complies with the relevant requirements in all respects.

Organizations or persons carrying out such work shall ensure that

The work is carried out strictly in accordance with the instructions and requirements of the original manufacturer, and a certificate of compliance with these requirements is issued upon completion of the work.

When existing equipment is replaced with new equipment, any such replacement shall be done using equipment in compliance with the relevant requirements.

SANS 1518 Vehicle Design “Grey Areas”

- ❖ It would appear based on audits and assessments completed on major hauliers and transport fleets that the requirement for certification is largely ignored by registering authorities based on the absence of relevant 1518 certificates available for inspection.
- ❖ It has been reported that the tank manufacturers are more compliant in terms of the issue of compliance certification than the packaged goods manufacturers.
- ❖ Tank survey on more than 700 tankers revealed that not one tanker was compliant in all respects for plating information.
- ❖ An inspection of packaged goods vehicles manufactured in 2014/2015 revealed an absence of side under-run protection.

Side under-run protection (not applicable to vehicles of GVM of 3500 kg or less)

B.1.13.1 All vehicles shall be equipped with efficient side under-run protection devices along unprotected areas of the sides of the vehicle to prevent pedestrians and cyclists from ending up underneath the moving dangerous goods vehicle.

SANS 1518 Vehicle Design “Grey Areas”

- ❖ **The SQAS assessment, relied upon by so many contracting companies, does not appear to adequately check certificates of compliance at present**
- ❖ **Companies who contract operators should ensure the legality of the vehicles to be used for both main contractor and subcontractors.**
- ❖ **This perceived lack of certification of compliance raises questions on the legality of the dangerous goods fleet.**
- ❖ **How does this situation impact on insurance?**

Published Revision – SANS 10231 - 2018

- ❖ **SANS 10231 – Operational Rules and Procedures**
- ❖ **The standard establishes rules and procedures for the safe operation and handling of all road vehicles that are used for the transport of dangerous goods in accordance with**
 - ❖ **The load constraints. (exempt quantities, load compatibility and exemptions)**
 - ❖ **The procedures include requirements for the consignor, the consignee, the operator, the driver and the qualified person as well as en route procedures, cargo handling, and vehicle inspection requirements.**
- ❖ **The requirements in the relevant National Legislation on explosives (Class 1) and in the relevant National Legislation on radioactive material (Class 7) take precedence over the requirements of this standard.**

Published Revision – SANS 10231 - 2018

The Operator

Clause 4.2.5

- ❖ The operator shall, on being informed of an incident involving one of his vehicles covered by this standard, ensure that the relevant emergency services and the police have been informed. The operator shall prepare an incident report in accordance with annex D and submit it to the relevant national authority within 30 days. The operator shall also retain the incident report for a minimum of 5 years.

Clause 4.2.8

The operator shall be responsible for ensuring that the vehicle and equipment fitted to the vehicle complies with all applicable statutory requirements with regard to

- ❖ a) the applicable vehicle design standard, in accordance with clause 6 of the standard,
- ❖ b) the vehicle roadworthiness and its suitability to the consignment to be carried.
- ❖ c) the serviceability of the consignment handling equipment and consignment containment areas.

Annex D

(normative)

Incident report format

An incident involving the transport of dangerous goods by road shall be reported in the following format (see 4.2.5):

Report on incident involving the road transportation of dangerous goods

Details of incident	
Name of Company (Operator)	
Date and time of incident	
Location of incident	
Brief description	
Cause	
Weather conditions	
Vehicle registration number/s	

Dangerous goods and involved in incident							
UN no's	Class	Packaging Grp	Description	Qty of product loss (kg or L)	Containment type (1)	Containment failure reason (2)	Containment material
(1) Containment type (insert appropriate number in column above)			Packaging	1	Portable tank	5	Small container
			Large packaging	2	MEGC	6	Large container
			IBC	3	Demountable tank	7	Fixed tank vehicle
			Tank container	4	Battery vehicle	8	
(2) Containment failure reason (insert appropriate number in column above)			Explosion	1	Structural failure	3	
			Fire	2	Equipment failure	4	
Consequences of incident							
Fatalities (insert number)					Injuries (insert number)		
Loss of product (Tick)		No		Yes		Imminent risk of loss	
Material/Environmental damage		Level of damage					
Description of loss							
Involvement of authorities		Authorities contacted					
		Action taken by authorities (evacuation, road closure)					
Details of cleanup action taken							
Documentation and placarding compliance-As found							
Dangerous Goods Declaration completed correctly? (Yes/No)							
Correct emergency response documentation in vehicle? (Yes/No)							
Was the correct information obtained from the specialist advice number? (Yes/No)							

Published Revision – SANS 10231 - 2018

Clause 4.2.9

- ❖ The operator shall be responsible for ensuring that measures are put in place to prevent vehicle overloading and under loading

Clause 4.2.10

- ❖ The operator shall be responsible for ensuring that the vehicle and equipment are maintained and inspected by a competent person, in accordance with this standard.

Published Revision – SANS 10231 - 2018

Clause 6.2 Vehicle inspection

6.2.1 General

- ❖ 6.2.1.1 The design and construction of a vehicle used for the transport of dangerous goods shall comply with the design requirements covered by the relevant standard(s) valid at the time of manufacture of the vehicle, or in terms of the relevant national legislation.
- ❖ 6.2.1.2 All goods vehicles used for the transport of dangerous goods shall undergo regular inspection in accordance with annex E. Defects and non-compliance found shall be rectified in order to ensure their sound mechanical condition and ability to operate safely.
- ❖ 6.2.1.3 Regular preventative maintenance shall be built into the working schedule of the operator and shall either be carried out at the operator's depot by suitably qualified staff, or be subcontracted to a workshop under the control of a competent person.
 - ❖ The subcontracted workshop shall provide a written report of the inspections performed in accordance with this standard.
 - ❖ Detailed records shall be kept of all maintenance and inspection work done on every vehicle. Records shall be retained for the periods indicated in the standard
 - ❖ The inspection records shall include records of the associated defect repair and non-compliance rectification work carried out.

Published Revision – SANS 10231

❖ Operational Rules and Procedures

- ❖ Inclusion of information with regard to fire extinguishers to be carried on the vehicle.
- ❖ Maintenance type and corresponding document retention periods.
- ❖ Operators to liaise with service providers to ensure that servicing and maintenance is conducted in terms of SANS 10231. (See Annex F for all the inspection schedules and requirements)
- ❖ The subcontracted workshop to provide a written report of the inspections performed in accordance with the standard.

SANS 10231 – Vehicle Inspections

TYPE OF MAINTENANCE ACTIVITY	RETENTION PERIOD OF RECORDS
DAILY INSPECTIONS	6 MONTHS
MONTHLY INSPECTIONS	1 YEAR
12-MONTHLY INSPECTIONS	LIFE OF VEHICLE
INTERMEDIATE PERIODIC INSPECTIONS	LIFE OF VEHICLE
MAJOR PERIODIC INSPECTIONS	LIFE OF VEHICLE
EXCEPTIONAL INSPECTIONS	LIFE OF VEHICLE
REPAIRS CARRIED OUT TO TANKS AND PRODUCT CONTAINMENTS STRUCTURES	LIFE OF VEHICLE
REPAIRS CARRIED OUT TO SERVICE EQUIPMENT.	LIFE OF VEHICLE

Published Revision – SANS 10231

1	2
CATEGORY	DESCRIPTION
OPERATIONAL INSPECTIONS	NORMAL INSPECTIONS THAT WOULD BE DONE AS PART OF THE IN-OPERATION AND MAINTENANCE INSPECTIONS AND APPLY TO THE VEHICLE AND TANK/PRODUCT CONTAINMENT STRUCTURE.
INTERMEDIATE PERIODIC INSPECTION	<p>THIS TERM IS IN KEEPING WITH THE TERM USED IN THE EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD (ADR) AND IS A SUBSEQUENT INSPECTION RELATED TO THE INITIAL INSPECTION AND APPLIES TO THE TANK/PRODUCT CONTAINMENT STRUCTURE ONLY. IT OCCURS EVERY 2,5 YEARS TO 3 YEARS, DEPENDING ON THE TANK TYPE.</p> <p style="text-align: right;">Development and Copyright - D.G.Consultants</p>
MAJOR PERIODIC INSPECTION	THIS TERM IS IN KEEPING WITH ADR AND IS A SUBSEQUENT INSPECTION RELATED TO THE INITIAL INSPECTION AND APPLIES TO THE TANK/PRODUCT CONTAINMENT STRUCTURE ONLY. IT OCCURS EVERY 5 YEARS TO 6 YEARS.
EXCEPTIONAL INSPECTIONS	ADDITIONAL INSPECTIONS REQUIRED DURING MAJOR STRUCTURAL REPAIR WORK THAT WOULD INVOLVE ALL OF THE ELEMENTS OF AN INTERMEDIATE OR PERIODIC INSPECTION OR WHEN A PREVIOUSLY OWNED VEHICLE IS PROCURED AND DEPLOYED IN AN OPERATION.

Published Revision – SANS 10232/1

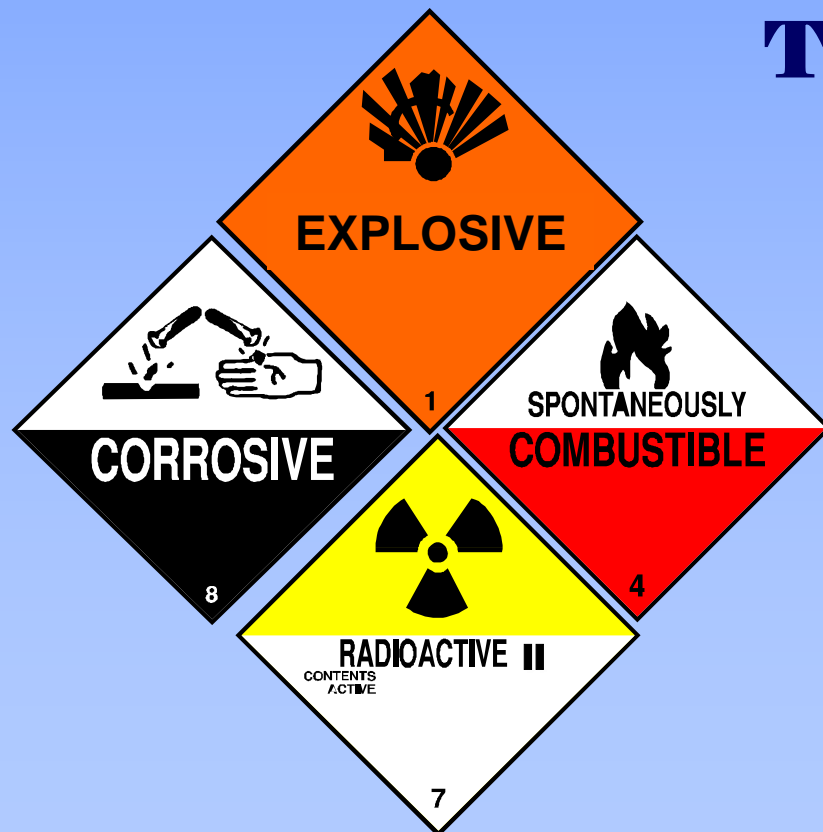
- ❖ No material changes have been made to the republished SANS 10231/1
- ❖ The term “MULTILOAD” has not been deleted but a NDOT proposal to amend Multiload to Mixed Load is out for comment. The definition for a mixed load in the proposal is in conflict with the definition in SANS 10231. Watch this space.
- ❖ The transport emergency card is defined as a card that can be generated in accordance with SANS 10232-4, that lists the hazardous and emergency information for a material being transported, for use by the driver during an incident, or by emergency services

General Comment on Dangerous Goods Transportation

- ❖ Legislation applies to dangerous goods transported in excess of the applicable exempt quantity for a single substance or calculated Mixed Load.
- ❖ Responsibilities are shared between the parties – Consignor, Operator / Driver, Consignee and Qualified Persons.
- ❖ The value of written procedures for loading and offloading and operational agreements between the responsible parties.
- ❖ Relevant training of drivers and Qualified Persons
- ❖ Relevant documentation and accurate placarding to assist emergency responders.
- ❖ Marking of imported dangerous goods packaging – UN Number and Shipping Name must be in English to assist the emergency / first responder to identify.
- ❖ Operators duty to notify Local Authorities re routes used and substances transported.
- ❖ Compatibility of Mixed Loads and compliance with compatibility provisions.
- ❖ Statutory Insurance to cover Civil Liability, Recovery and Rehabilitation.
- ❖ Only transport emergency cards generated in accordance with SANS 10232/4 are legal.

KEITH McMURRAY

D.G. CONSULTANTS



Transportation of Dangerous Goods

**National Road Traffic Act
93/96**

**Potholes and Legislation
Update 2018**

**keithmc@mweb.co.za
082-8282847**