



INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

L.45

(10/2000)

SERIES L: CONSTRUCTION, INSTALLATION AND
PROTECTION OF CABLES AND OTHER ELEMENTS OF
OUTSIDE PLANT

Minimizing the effect on the environment from the outside plant in telecommunication networks

ITU-T Recommendation L.45

(Formerly CCITT Recommendation)

ITU-T Recommendation L.45

Minimizing the effect on the environment from the outside plant in telecommunication networks

Summary

This Recommendation details the methodology adopted in order to minimize the effects (e.g. energy and CO₂) caused by the use of outside plant in the environment. This is based on life-cycle analysis, that is, *cradle to the grave* ownership of the products.

Source

ITU-T Recommendation L.45 was prepared by ITU-T Study Group 6 (1997-2000) and approved by the World Telecommunication Standardization Assembly (Montreal, 27 September – 6 October 2000).

FOREWORD

The International Telecommunication Union (ITU) is the United Nations specialized agency in the field of telecommunications. The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of ITU. ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The World Telecommunication Standardization Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

NOTE

In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

INTELLECTUAL PROPERTY RIGHTS

ITU draws attention to the possibility that the practice or implementation of this Recommendation may involve the use of a claimed Intellectual Property Right. ITU takes no position concerning the evidence, validity or applicability of claimed Intellectual Property Rights, whether asserted by ITU members or others outside of the Recommendation development process.

As of the date of approval of this Recommendation, ITU had not received notice of intellectual property, protected by patents, which may be required to implement this Recommendation. However, implementors are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database.

© ITU 2001

All rights reserved. No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from ITU.

CONTENTS

	Page
1 Life-cycle analysis.....	1
1.1 Manufacturing.....	2
1.2 Usage.....	2
1.3 Scrapping	2
1.3.1 Disassembling.....	2
1.3.2 Recycling/waste.....	3
Appendix I – Environmental issues for the outside plant – A "cradle to the grave" approach for environmental impact from a transmission line based on LCA	3
I.1 Life-cycle analysis (LCA) on an optical transmission media	3
I.1.1 Abstract.....	3
I.1.2 Introduction.....	3
I.1.3 Scope – "Cradle to the grave" perspective on optical cables.....	3
I.1.4 Conditions for the study.....	4
I.2 Manufacturing.....	4
I.3 Usage.....	4
I.4 Scrapping	5
I.5 Summary.....	5

ITU-T Recommendation L.45

Minimizing the effect on the environment from the outside plant in telecommunication networks

considering

- that the energy consumption to maintain the continuous operation of data and telecommunication equipment for IT activities has a significant impact on the environment. For example 1% of the total power consumption of Stockholm is used to realize all telephone calls and to be able to transmit and receive all fax messages and data files on a 24-hour basis;
- that there is the potential for energy saving with effective telecommunication solutions;
- that the use of IT technology can be a possible way towards a more sustainable society with efficient use of energy and with a substantial reduction in the emission of "greenhouse" gases;
- that the global warming phenomenon causes disturbances in global weather conditions which result in storms, floods, erosion, malaria and changes in the sea currents in the oceans;
- that a life-cycle analysis of underground optical cables has been carried out in Sweden which shows it is applicable to other networks;
- that energy consumption changes continuously with the development of cable design, cable manufacture, installation methods, tools, machinery and vehicles;
- the existence of an Agenda 21, a comprehensive plan of action to be taken globally, nationally and locally by organizations of the United Nations, governments and major groups in every area in which humans impact on the environment;
- that there are instances where toxic waste is polluting the environment through ignorance or neglect,

it is recommended

- to contribute in all industrial activities to reduce the effects of global warming;
- to minimize energy consumption and reduce greenhouse gases in accordance with the technique of life-cycle analysis in ISO 14040;
- to use ISO 14020 and ISO 14025 as criteria for an environmental declaration on products and systems;
- that each organization involved should have an environmental policy and an environmental plan with measurable goals on how to improve products and methods for a reduction in the consumption of energy;
- to keep track of toxic and dangerous substances and to have a waste management system.

1 Life-cycle analysis

In an attempt to cover the whole life cycle using a "cradle to the grave" perspective for cables and equipment, the life cycle is divided into three phases (see Figure 1):

- manufacturing;
- usage;
- scrapping.